Morning Session.

Kansas City, Missouri, Tuesday, June 21, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

Dr. John Wesener, in continuation of his cross-examination, further testified as follows:

By Mr. Butler:

Q. How many samples of unbleached flour have you analyzed since bleaching commenced by the Alsop process?

A. I couldn't say the exact number; I would say between one and three thousand.

Q. One to three thousand?

A. Yes, in round numbers.

Q. Of unbleached flour?

A. Unbleached flour.

Q. Would three thousand be conservative, or will we make it two? A. Well, two would be conservative.

Q. What is the expense of having a sample of flour
1461 examined by the Columbus Laboratory?

Judge Scarritt: We object to that as immaterial and irrelevant.

The Court: You may answer, not go into the details.

To which ruling of the court claimant then and there duly excepted.

Q. No, it is either one dollar or ten or forty or a hundred; one word will answer.

A. With reference to the value of the flour as flour, you mean.

Q. I wanted to find out what you charge for examining each sample of the fifteen thousand samples of bleached flour you examined since bleaching commenced.

Judge Scarritt: I renew the objection.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. We charge two dollars and a half a sample.

Q. Speak a little louder?

A. Two dollars and a half a sample.

Q. In your analysis of the patent flour how much ash do you find?

A. That depends on—

Q. In the soft wheats of the South, the soft winter wheats of Missouri, Kentucky, Southern Illinois, and that territory, the whitest flour?

A. Well, our standard is .35 per cent, our standard.

Q. .35 of one cent is what you find? A. Yes.

Q. You have established a patent standard?

A. Which we change every year.

Q. Oh, of course.

A. We change every year when the new wheat crop comes in.

Q. In the spring wheats, the spring hard wheats, what
1462 is your standard ash for patent flour?

A. Well, from .42 to .45.

Q. Yes, and the winter hard?

A. From .40 to about .42.

Q. This flour that was seized did you examine—did you make an ash determination? A. Yes.

Q. How much did you get? A. .46

Q. .46. Now, assume that Miss Wessling and the others were right and got .57, is it a patent flour?

A. Well, it is not a high grade patent, according to our own standard, it may be a patent the way that method turns it out.

Q. That is, if it is true that everything is a patent which a miller calls a patent, then this seized flour is a patent?

A. Well, of course, the way you use the word "patent" it is absolutely meaningless, absolutely meaningless.

Q. Well, according to the standard as fixed by your own best judgment, isn't it?

A. We say that a flour that is properly cleaned and will mill, and nicely bolted, and so on, should have only so much ash from a given weight.

By the Court:

Q. Let me ask you, do you mean "patent" is meaningless or indefinite?

A. I mean it is meaningless and also indefinite, and I can explain that to you fully that is, if you wish.

The Court: Well, you have gone over that; I didn't think you meant to use the word "meaningless".

A. Meaningless because it refers to the patented roller system.

The Court: That is forty odd years old.

By Mr. Butler:

Q. In the Dixie Miller of October, 1907, at page 36, you are reported to have said in substance as follows: "Now, should the miller be prevented from bleaching flour when he

can give the consumer and the baker and everyone a better flour, improve the flour, age it rapidly, standardize it better, it contains more nutriments, and there is more gluten
1463 present, and makes a larger loaf, increases absorption." Did you so state in substance and effect?

A. I don't know whether I stated that; I may have stated that.

Q. Those are your views?

A. Those are my views; those are my views; yes, sir.

Q. In the Dixie Miller of October, 1907, at page 36 you are reported to have said: "We have examined the gluten very minutely. We have never found any nitrite in combination with the gluten. We have never found any variation in the gluten, and we have never found any variation as yet in the oil; the only change that we have found is the coloring matter of the flour." Did you so state?

[Q] I don't know whether I did or not, but that would be true.

Q. Those are your views? A. Yes, sir.

Q. The American Miller of 1909, at page 885, reports you as saying: "Not all of the flour contained in the grain can be in the form of middlings of such a character that they can be sufficiently purified to make a better grade of flour. The remaining portion is mixed with fine fragments of bran, and even the germ, which is the embryo of the kernel. This portion of the flour is generally named clear grade flour; it is darker in color than the patent flour, and when separated in this way is inferior for bread making purposes because of the impurities it contains. When the clear flour and the patent flour are united in one, they constitute a high grade flour much more superior to the flour made by the old stone mill process, has more of everything, its same general character but from a good and economic character the clear flour is superior to the patent flour because it contains more protein, more of the fat and less of the starch. The same is true of the straight grade flour for it contains the excess of these ingredients more than in clear, and at the same time objectionable qualities of the clear are largely removed because the impurities more diluted; except as regards color, more beneficial than injurious." Did you so state?

1464 A. In what paper?

Q. The American Miller of 1909, page 885?

A. I don't know anything about that, but I did state it in the Industrial Journal of Engineering and Chemistry published by the American Chemical Society; it originally was in that Scientific Journal.

Q. Those are your views? A. They are.

Q. The Dixie Miller of October, 1907, at page 736, reports you as having stated as follows: "There cannot be any deception practiced taking the law as it reads unless you substitute an inferior for a superior article. I will just explain to you that the reverse is true, that you are substituting a superior article for an inferior article. The old-fashioned patent flour was the white portion of the wheat. The starchy portion that did not contain the food value that is contained in the germ, colored middlings or the more colored middlings, it does not contain the food value or the strength. Now, by grinding up these middlings and purifying them and simply taking out the color, you are making a better flour than the old-fashioned patent, better for the baker, better for the miller, better for the consumer." Did you so state?

A. I don't know whether I said that in that particular publication but those views are mine.

Q. Those views are yours?

A. I approve of them. People are getting better flour and cheaper flour.

Q. I am asking if these are your views.

Judge Scarritt: Let him explain if he wants to explain.

Mr. Butler: He explained yesterday that he did not change it. We will leave it that way until you get him.

Judge Scarritt: Do you desire to explain?

The Court: That is a very simple and elementary rule. This is equivalent to asking the witness if he upon another occasion stated so and so. If he admits it that ends it;
1465 if he denies it, why then they have a right to bring their proof forward.

Judge Scarritt: Certainly.

The Court: In other words, it is a foundation for the impeachment. If he admits it that ends it. If he denies it they have a right to show they said it.

Judge Scarritt: He can explain it if it is an impeaching question.

The Court: Yes.

By Mr. Butler (resuming):

Q. The Dixie Miller of October, 1907, at page 736 reports you to have said as follows: "The thing (meaning bleaching) is either right or it is wrong; it cannot be half way. In this particular we have never found anything wrong. We have found that the bread was, if anything, increased in volume; it gave a larger loaf; it increased the absorption and benefited

the baker thereby. From a food standpoint it is better. Why, because you put in a little bit of the second patent, a longer patent, that is a better part of the wheat kernel, why shouldn't it go in? It makes you a larger loaf, makes you more loaf and gives the consumer more for his money. There is no reason why this should not go in provided it is equal and superior to the patent." Did you so state?

A. I don't remember of making that statement in the Dixie Miller, but that is, as a whole, is nearly correct.

Q. That expresses your views?

A. Nearly so, not entirely so. I would like to explain why it does not entirely meet my views.

Q. There are others of a similar nature that I call to your attention, and maybe your counsel will give you an opportunity to explain. In the American Miller of 1909 at page 974 did you state as follows: "The average value which in our report is based upon the color of the flour, the character of the
1466 bread, the amount of the bread and the size of the loaf, was a little higher for the bleached flour than the unbleached, because the color of the flour and the color and quality of the bread was improved." Did you so state?

A. Well, I don't know whether I stated; possibly my associate Professor Tullar did.

Q. Are those your views? A. They are my views.

Q. The Dixie Miller of October, 1907, at page 736 reports you as saying: "I know a miller in Ohio who makes a hundred per cent patent and it analyzes a hundred per cent patent, and he sells it for 100 per cent patent; he has a right to sell it for 100 per cent patent because it is 100 per cent patent." Did you so state? A. I stated that.

Q. You stated that before the Bakers' Association?

A. And that is absolutely true, he is doing that, but according to your rule you call that a straight.

Q. And in the Bakers' Helper reporting your speech, which I have not in my hand at this moment, you state: "Hats off to the miller who can make a 100 per cent patent that will analyze a hundred per cent patent" didn't you?

A. I say that to any man that will get all the flour out of his wheat.

Q. You say that now to the jury don't you?

A. It is a pretty good thing for the consumer and the people; it gives us cheaper bread.

Q. And if it has .57 of one per cent ash as the seized flour has, you still say "Hats off to that kind of a patent", don't you?

A. No, I say that miller ought to be taught to make probably a little better flour, to get out more of the impurities; it doesn't mean that the flour is bad.

Q. To convict him of misbranding would help to teach him?

A. I don't know what you mean by misbranding in this case.

Judge Scarritt: We object to that.

1467 The Court sustained the objection.

Q. The Operative Miller of 1907 at page 432 reports you as saying: "The knowledge possessed by the average flour jobber and user without analysis in a chemical and technical sense is of little value. The opinion of any baker unless he has had scientific and technical training is hardly a sound basis for a scientific conclusion." Did you so state?

A. I did, and that is true too about these gentlemen.

Q. So a gentleman like Mr. Freeman would not appeal to you as having had much sense about this matter?

A. I don't know that, I don't know who you refer to.

Counsel for Claimant objected.

Q. The Operative Miller of 1907, at page 432 reports you as saying: "Bakers cannot detect the slightest difference in bleached and unbleached flour." Did you so state?

A. I did so state, and when I addressed the National Association of Master Bakers, 250 present, and not a one there knew they had been using bleached flour and they had been using it for three years.

Q. So they were deceived to that extent by it, weren't they?

A. Not at all.

Q. They didn't know it but they were not deceived, well we won't go into the psychology of it. At the hearing before the Secretary of Agriculture, the transcript furnished to me by the Department represents you as having said as follows: "The more I go into the subject of bleached flour the more interesting it becomes and the more convinced I am that it is not only a legitimate process, not only for the miller but also for the consumer. It is a very fine advance in the art of milling." Did you so state?

A. I did, and I meant every word in it too.

Q. The American Miller of 1906, at page 997, refers to an article which you wrote for the Bakers' Review, and represents you as saying as follows: "He" (meaning you) states
1468 that the color is a very valuable index to the grade of the flour when in the natural condition." Did you so state? A. I would have to see that.

Q. Are those your views?

A. The color is an indication of the grade and the way that flour has been—or that wheat has been milled, but the

color is only one factor in grading the flour—wait till I finish my answer, and—

Q. Just a moment. A. I have not finished my answer.

Mr. Butler: I move to strike out his answer as not responsive to the question.

The Court: Yes, he has asked you the question, and I repeat, that this is for the purpose of impeachment. Now you can affirm or deny. If you affirm, that ends it, the Government has a right to bring forward witnesses.

Q. I will restate the question so there will be no doubt about it, if you will permit me, and give you time to make your objection.

Judge Scarritt: All right.

Q. Is this statement, to-wit, that the color is a very valuable index of the grade of the flour when in a natural condition, a fair representation of your views?

Mr. Scarritt: Now that is not an impeaching question; therefore he has a right to explain what his views are.

The Court: Certainly, he was asked if he stated that before the Secretary of Agriculture.

Judge Scarritt: Not in this last question.

Mr. Butler: As stated in the article written for the Bakers Review.

The Court: Of course, I was mistaken about it.

Judge Scarritt: I would suggest that he answer that question yes if he remembers it so, or no, if he is satisfied that it is not so, but if he is indefinite about it, he can ex-
1469 plain what his views really are.

The Court: He has asked him to state whether or not those are his views. Now he can say they are or they are not. Answer.

To which ruling of the court claimant then and there duly excepted.

A. I would want to have what precedes that.

The Court: No, he asked you if those are your views.

A. I have to know what precedes and what follows that; it may be my views as far as that particular statement goes, but that view may not be the right view when [when] what comes before or after.

The Court: That answer is sufficient; that enables the Government now to bring the proof, he says no, that is equivalent to a denial.

Judge Scarritt: I would like to except to that, being equivalent to a denial.

The Court: What I mean by that, that will allow the Government to bring forward the proof that he did say that.

By Mr. Butler: (resuming)

Q. As printed on page 252 of the transcript you are represented as saying the following: "There is virtually no difference between the bread making qualities of bleached flour and that of the unbleached flour. It is true that if you have flour made from new wheat and you are bleaching it, you season that flour and you put it in a condition so that it can be put on the market immediately, whereas if it is not bleached you are liable to have more or less trouble if you send it out on the market because the moisture of that unbleached flour still contains may be the cause of mustiness or mold because the fungi and mold grow very rapidly if you give them the right degree of moisture, whereas the aeriation process helps remove some moisture, dries out the flour, it removes the moisture to the extent of .14 of one per cent." And the
1470 transcript represents Dr. Dunlap as asking you: "Out of a total of how much?" And represents you as answering about 12 per cent; and Dr. Dunlap is saying: "And that is sufficient to make a difference between that flour in which fungi would occur and one that would not produce them?" And represents you as answering: "Not that particular evaporation, but it will continue evaporating after it goes into the sacks." Did you so state?

A. I think I nearly stated it in just about that way, yes.

Q. Those are your views? A. Yes.

Q. Flour treated by nitrogen peroxide gas will not continue evaporating after it goes into the sack?

A. It will continue evaporating, it will dry out but this aeriation is not due to the peroxide of nitrogen; that is due to good air; that takes out the moisture and immediately conditions it for the market in that way which of course means cheaper flour and cheaper bread.

Q. Larger volume and better for consumer and better for baker?

A. Well, the larger volume might not always take place but it will be as large and even larger than the unbleached flour of fresh milled wheat, it would be larger.

Q. How about corrosive sublimate, would that also destroy the mold and fungi if you put in enough corrosive sublimate into the flour?

Judge Scarritt: We object to that. There is no contention that there is any corrosive sublimate in this flour; we object to it for that reason, not a proper question on cross-examination.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Why, corrosive sublimate will stop the growth of mold, but peroxide of nitrogen is excellent food for mold to grow on, peroxide of nitrogen, it is excellent food.

Q. Would carbolic acid destroy the fungi and mold?

Same objection.

The Court: He may answer.

1471 To which ruling of the court claimant then and there duly excepted.

A. Certainly it would.

Q. Would embalming fluid ordinarily used by undertakers?

Same objection.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I think it would, yes, but peroxide don't stop molds, they grow beautifully on that.

Q. If peroxide is used to kill the vermin, the peroxide which is made by the Alsop process is used to kill vermin, the Mediterranian moth and other things of that sort, about a mill, you think that vermin in flour would thrive on it and would the nitrites of it be necessary to life?

A. Gas as made by the Alsop process would not kill any vermin.

Q. You tried that on them, have you?

A. I have not tried it, but I know from the strength present—

Q. Oh, you know it?

A. It would not have any effect on them.

Q. You know that? So you know that Mr. Dennison who does use it only for the killing of vermin was not telling the truth?

A. I did not recognize that he used it for that purpose—

Counsel for claimant objected.

The Court: That is objectionable.

Q. The American Miller, at page 886, represents you as saying: "The coloring matter of the flour is the one material that shows the great avidity for uniting of the gases which are used in bleaching. But the coloring matter is in such case and the amount required for the purpose of bleaching the flour is very minute. If an excess of the gas is used it will eventually combine with the other substances, primarily with the gluten, and finally with the oil until the flour is overbleached and ruined that action on these constitutents is sufficient to be de-
1472 tected by chemical or physical property." Did you so state?

A. I recognize stating that in the Industrial Chemical Journal.

Q. But it represents your views, does it?

A. Oh yes, yes sir.

Q. That is all we care about.

A. Well, what you are reading is always a copy of my original article which is published in the scientific paper, it is copied by these different journals; I did not publish in the trade journals.

Q. At Washington before the Secretary at the hearing, did you say as represented by the transcript at page 246 as follows: "The yeast and also the process of preparing the bread removes the nitrites."

Judge Scarritt: Now, if your Honor please, we object to that and all similar questions, and to those that have gone before of the same nature, for the reason that they are not different from what the witness has already stated his views were.

Mr. Butler: I am glad you made that point, because I want to remind you that this witness took his solemn oath in questions framed to elicit the answer, by Mr. Elliott, that the flour or the bread did not contain nitrites.

Judge Scarritt: That is what he says there.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

(Question read.)

A. I said that at that time, because I thought they were nitrites, but I know now they are not nitrites but act like nitrites.

Q. Did you further say on that occasion: "There is an exception to that particular statement in so far as once in a while some of the bread contains minor numbers of nitrites but

they are [infinitisemal] they can not be grasped by the hu-
1473 man mind; the highest amount we have found is .25 of one part per million nitrite nitrogen." Did you so state?

A. I did not state that last, no, because I don't understand what you mean.

Q. .25 of one part per million? A. Oh yes, .25 parts.

Q. That is .25 parts is as much as you have had?

A. At that time in 1908 about as much as I would find once in a while in bread of this nitrite reacting material.

Q. Now, how much is in the air, that the human mind can not grasp, what is in the bread, how much is in the air now?

A. I don't know, Dr. Marshall is the only man made those tests.

Q. You have not tested that at Kansas City since you came here? A. No, I have not tested that.

Q. We will come to that a little later. If there was one part in the billion in the air, could the human mind grasp it?

A. Well, I think you could grasp that just as much as the twenty-five ten millionth of one per cent in bread.

Q. If there was one part in the million, and you told us the truth when you say that flour in your room for 18 hours took a recoverable nitrite reacting material to the extent of 1.8; do you know how many cubic feet of air would have to pass through a kilogram of flour and give to it all of this nitrite making material in 18 hours to produce that?

A. I never made that statement.

Q. No. A. I never made that statement.

Q. Yes. A. Yesterday.

Q. But what was the statement, how much in your room did you get in 18 hours then?

A. I have not assumed that there is; I said that was 18 hours room exposure, but I never said it took up 1.8 parts in the million.

Q. Well, you said you did find four parts per million in your kitchen? A. I did say that, yes, sir.

1474 Q. Now by one part to the million how much air would have to be passed through that flour?

A. You mean the same that you gave me, that problem recited one billion cubic feet to one, that is one cubic foot to one billion cubic feet.

Q. Assume a kilogram of flour, say, how much would it take?

A. Figure as NO2, 4 parts of a kilogram of flour, and figure that.

Q. But you did not figure it as NO2, four parts in a kilogram of flour, you gave that to us in terms of nitrogen yesterday?

A. But I know what you gave me.

Q. I withdraw the question then.

A. That is what I am talking about.

Q. And from my investigation, see if I can't repeat it, if it takes 25 cubic centimeters of NO2 to bleach the seized flour so as to produce 1.18 nitrite reacting material, computed as nitrogen, then to produce four parts of nitrite nitrogen, it would take 55½ cubic centimeters of NO2 to bleach the kilogram of flour, a little more than twice as much as that contained in 51. Now if there was one part to the billion in air, would it not take to effect the bleaching of the kilogram of that flour in your kitchen all of the nitrite producing material in one million three hundred thousand cubic feet of air?

A. Well, I would say I would have to go over those figures very carefully, but that does not at all correspond with the problem you gave me, and I think the one you gave me yesterday would be the one that we ought to confine it to, I would not attempt to answer it now.

Q. And we will not wait.

A. I will take those figures though, if you want me to, and report on them this afternoon.

Q. If the air at Kansas City is found to contain 9½ milligrams per million cubic feet, then it will take the NO2 or equivalent in two million six hundred thousand cubic feet of air to hold four parts per million of nitrite reacting material computed as nitrite in a kilogram of flour, is that not true?

A. I don't know, I would have to study those figures.

1475 Q. Well, all right, you may study them hereafter?

A. My figures don't correspond with yours either with the question you gave me, but I am ready to report on that right now if you want to.

Q. Do you think it would be possible in 18 hours time to put—in your bed room—to put a quarter or a half a million cubic feet of air through a kilogram of flour?

A. I should say not.

Q. No, blow the hotel down, wouldn't it, there would be a cyclone there, wouldn't it?

A. I don't know what would happen.

Q. In the patent, "Government's Exhibit 1" it is stated among other things as follows: "The second analysis of the flour was conducted by the Henry Professor of Physics at Princeton University, and his assistant Professor, and it was found that while the untreated flour contained 54/1000 of a gram of nitrogen to one gram of flour, the treated flour contained 75,1000 of nitrogen to one gram of flour" In your analysis of bleached flours did you ever get any such result?

A. Most certainly not.

Q. That statement can not be true chemically, can it?

A. It is not true, sir.

Q. In order to do that this flour would have to be treated with sixty-six thousand parts of NO2, would it not, per gram?

A. I don't know, I would have to go over that.

Q. Never figured it out, I suppose you could do that for us?

A. I could.

Q. Is the statement in this patent to the effect that it increases the water true, in flour?

A. I should say not.

Q. Is it true that it increases the food value, the nutritive value? A. No, it does not.

Q. It does not. Is it true when it says it bleaches it, that NO2 bleaches it?

A. No, I don't think NO2 bleaches it.

Q. Not true in that regard? A. No, sir.

Q. Is it true when it says that process bleaches it?

1476 A. The process bleaches it, yes.

Q. Is it true when it says gases bleaches it?

A. The gases I think generate—

Q. The gases generated by the flaming arc bleaches it, does it?

A. Yes, some gas generated by the flaming arc bleaches it.

Q. Is it true when it says it bleaches it dead white?

A. Well, I don't know what you mean by dead white.

Q. You couldn't tell what dead white means?

A. No, I seen so many dead people, I don't know what dead white is.

Q. You don't know what dead white is?

A. I know what chalky white is; I don't know what dead white means, because I seen too many different colors in dead people.

Q. I see. Did you know Mr. Alsop?

A. Never met him.

Q. You know Mr. Mitchell?

A. Yes, sir, very well.

Q. You didn't have anything to do with preparing these patent specifications?

A. No, I didn't know anything about that at that time at all.

Q. Is there any ammonia gas in air? A. Yes, sir.

Q. Is its formula HN3?

A. If it exists as a gas it would be.

Q. Is it three times as great in volume or about that, as the NO2 in the air?

A. I couldn't say as to that.

Q. Assume that it is then and answer this question, whether or not these gases coming into contact with the water will form nitrite of ammonia and nitrate of ammonia in equal chemical parts?

A. That would be the immediate chemistry.

Q. Yes, would nitrite of ammonia bleach flour?

A. Nitrite of ammonia?

Q. Yes.

A. I have never tried it, but I don't believe it will.

Q. Would nitrate of ammonia bleach flour?

A. Never tried, no, that would not bleach it at all.

Q. In a barrel of flour there is about 20 pounds of water, isn't there? A. About that, yes.

Q. Would 20 pounds of water be sufficient to cause the
1477 reaction of the ammonia gas and the nitrogen peroxide gas of the water to form nitrite of ammonia, would 20 pounds be enough?

A. Why, yes, 20 pounds water would be enough and the per cents of ammonia gas and peroxide of nitrogen to form ammonia nitrite.

Q. And satisfy all the economical power of the nitrates in the room here or out doors?

A. Yes, but that would not bleach flour, you know.

Q. No, that is what I thought, just what I have been looking for all the time?

A. If you have nitrites in flour, as long as there is nitrite reacting material, why the color is got out of that flour. When I use the word "nitrite" I refer to it as nitrite reacting material; I may misspeak myself.

Q. Nitrite of ammonia is not?

A. Nitrite of ammonia is genuine nitrite, that is the true nitrite and the same kind of a nitrite is found in ham, corn starch and so forth; those are genuine nitrites.

Q. Nitrite of ammonia is a genuine nitrite?

A. You are right, it is.

Q. But won't bleach flour?

A. I never tried it, but I am certain it will.

Q. Does not without the nitrates being first changed to nitrites?

A. Well, that is a question I could not answer, but wouldn't be surprised they did.

Q. I don't care about your surprise, you say you could not answer that question?

A. Well, I don't care with the limitation on it.

Q. You don't know about it, you could not answer?

A. I think we have some more study in that line now.

Q. What plants will change nitrates to nitrites and also change nitrites to nitrates?

A. Well, I know that—take germinating barley, that is a plant which will reduce nitrates to nitrites very rapidly, and other germinating seeds will reduce nitrates to nitrites. I have taken barley and—

1478 Q. Just a moment, doctor, please. I intended merely to call for the list of plants that will do that thing, and not for experimental detail because we want to hurry along.

A. Well, I would not be able to give you the list, but I have tried it with germinating corn, germinating barley and several others, and I found that the nitrates are reduced to nitrites. Now I don't know of any plants that would change nitrites to nitrates; there may be some but I don't know of any, but of course, there are bacteria which are plants which will oxidize nitrates to nitrites.

Q. You didn't understand my question. Now just give it close attention and see if you can answer it. What plants are there, if any, which will change nitrites to nitrates, and also which will change nitrates to nitrites?

A. Well, I have answered that.

Q. What plants?

A. I have answered it in my former question.

Q. I think not, you said they would do it one way but you don't know whether they would do it the other or not?

A. I said I knew of some plants that would reduce nitrites to nitrates and mentioned it, but I said I didn't know any plants that would oxidize nitrates into nitrites, although bacteria, which are also plants will oxidize nitrites into nitrates, and also reduce nitrates to nitrites.

Q. Do you know of any plant which will do both?

A. I don't know any, no.

Q. That is what I thought. Name in detail the human body's natural defenses against nitrites, you referred to them yesterday, give us the whole program completely, now, professionally, so that the toxicologists will say there is the truth or there is the error—the body's natural defenses against nitrites?

A. Nitrites when they enter into the stomach, that is the inorganic nitrites, when they enter into the stomach are rapidly consumed by the bacteria that are in the stomach and also in the intestines. If organic nitrites are given such as ethyl nitrite, or I should say amyl nitrite, the gastric juice decomposes the amyl nitrite into nitrous acid. This nitrous

1479 acid immediately decomposes because it cannot exist as nitrous acid, and any NO2 which is formed, will combine with the mucus which is secreted by the stomach, and then it will make fine food for the bacteria and be rapidly consumed. Any nitrite that goes through the body, that is through the intestinal tract and is absorbed into the body will be oxidized to

nitrate and some of it will be broken down into other forms, but nitrites, nitrite medication, increases the nitrates in the urine, the nitrate medication on the other hand will also probably produce nitrites in the gastrointestinal canal. The pancreatic ferment, this ferment which is always secreted by the sweetbread gland, will reduce nitrates to nitrites, and the fact that this ferment can do that that we are taking in nitrites with our vegetables daily, and other food stuffs, why, there must be some defense for the nitrites generated by this pancreatic ferment from the nitrite, and this defense that I have mentioned, namely bacteria; second, oxidation; third, different compounds producing decomposition compounds, and fourth, entire consumption of the nitrite as such. The same thing is true of the sulphur dioxide that the United States Government is going to allow, the same process would take place there on that, the sulphur dioxide.

Mr. Butler: I move to strike out his forecast of what the United States Government is going to allow.

The Court: Oh, yes, you are asked the question there.

A. All right; I beg pardon, Judge, that is all right.

Q. Has your answer to my question, asking you to enumerate the body's natural defenses against nitrites been completed?

A. Well, I think it is.

Q. You think it is full and scientifically accurate so that other gentlemen as learned as you are will be able to understand from a strictly scientific standpoint, what your views are?

1480 A. Well, I think my views are sufficiently clearly stated there so that—I can elaborate on them, if necessary, or they can elaborate on them. I think I have put in all the premises necessary to cover your question.

Q. Do bacteria change nitrates to nitrites?

A. Oh, yes, I should say probably 75 per cent, that is nitrates to nitrites?

Q. Yes.

A. Reduce them just about 75 per cent, I would believe they would do that.

Q. Are nitrites foods? A. Foods?

Q. Yes.

A. I believe they are excellent foods for bacteria.

Q. For the human family are nitrites food?

A. No, I would not consider nitrites food for the human family.

Q. Well, you said yesterday, that nitrites were essential to life; do you mean that we must eat nitrites to live?

A. No, that we must have nitrites in order to feed the vegetable kingdom, so that we can have food from the vegetable

kingdom, that if this process did not go on, continually on, animal and vegetable life would become extinct; that is what I meant by that.

Q. Now, I want to be perfectly plain with you about that. Now, yesterday when Mr. Elliott elicited from you by his questions the statement that nitrites are necessary to life, you meant that they were necessary to the life of plants and that the human family could not live unless plants live?

A. That is exactly what I said.

Q. You did not by that testimony, Dr. Wesener, I trust, expect this court and jury to believe that it was your opinion as a toxicologist that the consumption of nitrites by the human family, nitrites as such, was necessary to the life of the human family, did you?

A. Why, most certainly not; why, of course not.

Q. But yesterday when you said they were necessary to life you did not explain that it was necessary to the life of plants and that plants were necessary to the life of people, did you? A. Yes, sir, I did; yes, sir, I did.

1481 Judge Scarritt: He testified the very thing.

A. Yes, I did, yes, sir.

Q. And by the same reasoning you say that the nitric acid which is manufactured by the flaming arc is necessary to life, too, don't you, but you do not mean it is necessary to eat it in order to live, do you?

A. No, sir, not necessary to eat, although we often put it in bread to get a better loaf of bread, the same as hydrochloric acid and other acids.

Q. Alsop has been doing that all the time?

A. The regular baker does.

Q. What baker customarily uses nitrite to make bread?

A. I couldn't tell you, but it has been used; they have used hydrochloric acid; we have given them instructions along that line to show how the gluten is broken down by these different acids to make it more resilient, because the gluten never works good until acids act upon the gluten.

Q. And you believe, do you not, that notwithstanding nitric acid in appropriate quantities is poisonous and will ruin bread, that you can trust the baker sense, dictated by commercial expediency, not to add too much of that poison into the bread, don't you?

A. Well, if he had it anywhere near too much, it would not even then add a poison, the yeast would never go, the yeast would stop him right there as it would not be a poison, the amount of nitric acid that he would use in his sponge.

Q. Is there any oxidation process in the intestines?

A. Yes, sir, a reduction.

Q. By what means? A. By enzymes or ferments.
Q. You said reductions, did you?
A. And also oxidations, yes, sir.
Q. Oxidations by what particular bacteria works the inside?
A. Those are chemicals, we must recognize, I believe, as chemical ferments, I don't think they have been isolated, but they are spoken of in that sense by bacteriologists and
1482 physiologists, and so on.
Q. Are you familiar with the articles of Mayberry with respect to the amount of nitrites in the air?
A. No, I don't believe, never seen it.
Q. Have you any information on that subject at all?
A. No, I have no definite information; I understand there is something in Thorpe's or Watts' Dictionary, but I have not ever even looked it up.
Q. If you were informed that in the park vicinity of the city of Cleveland there were nitrites in the air about one part per million—1.2 parts per million—would that seem to you to be about reasonable, or have you any idea of what ought to be found, what would be expected in such a case?
A. No, I have no idea at all; I am going to make those tests, but I have not made them.
Q. So then, what would naturally be expected here at Kansas City or in your bedroom or in your kitchen you could not give us any information about? A. No, I could not.
Q. And the particular form in the air?
A. Well, on account of the chemistry of bleaching that is where the oxide compound of this coloring matter is formed, this compound, that is not a nitrite or nitrite re-acting material; I must assume, of course, that there exists there oxide of nitrogen, if not, if the ammonia nitrite, why, then, it is the acid of the flour itself that would decompose the ammonia nitrite and liberate the oxide nitrogen in order to bleach this coloring matter.
Q. I am not asking about the bleaching process at all. I am asking you if you have ever scientifically ascertained the form of the nitrite in the air?
A. Well, that is my answer, I have not been able to do that.
Q. You have assumed that that does the bleaching?
A. Nobody also has done it.
Q. You assume that does the bleaching?
A. Well, I know it does.
Q. And on that assumption you know if it is nitrite of ammonia it must be broken up and be decomposed in the
1483 flour? A. Or exist as oxides of nitrogen.
Q. And then the NO2 will do the bleaching when the gas is liberated, so that is assuming nitrites in the air do the

bleaching, then you reach the determination that it must be done in a certain way, and from the fact that it must be done in a certain way you reason that it does it; that is your line of reasoning on that, isn't it?

A. Based upon the actual chemistry of the coloring matter which I understand but which you do not understand.

Q. No, of course, Doctor; but now, Doctor, I hope you will not be to hard on me because—

A. Well, I don't want to be.

Q. Because I can't understand your talk.

A. I don't want to be.

Q. But you assume that the nitrites in the air bleach, and because you assume that the nitrites in the air bleach, you assume that NO2 must be used or broken up in the same way, and therefore you say that the nitrites in the air bleach, that is about your line of reasoning according to this science that you understand and that we do not?

A. I say that it is the ammonia nitrite bleaches, providing the acid in the flour breaks up the ammonium nitrite and liberates this new nitrogen peroxide, and if it is not that process, then the oxide of nitrogen as such exists, bleach the coloring matter, because it must be the oxide of nitrogen to act on this coloring matter to bleach the flour, and ammonia nitrate as ammonia nitrate never could bleach the flour, it takes an oxide nitrogen to bleach, it has to be that.

Q. What chemical changes take place when nitrosylchlorid is used to bleach wheat flour, and go to the blackboard and write it.

Counsel for claimant objected to the question as immaterial to any issue in this case.

A. (Witness writes on blackboard) NOCl.

Q. On the blackboard you have written the chemical letters NOCl. Does that represent to the learned mind of a chemist all of the chemical changes which take place when nitrosylchlorid is used to bleach wheat flour?

1484 A. No, it does not, but you asked me—

Q. Please write on the board the chemical formula or formulae for such changes that take place when flour is bleached by the nitrosylchlorid which you patented?

A. In doing that I wish to state—

Q. Well, do it first and then state.

Judge Scarritt: He can state, if Your Honor please.

Mr. Butler: I ask to have him do it first and then state.

The Court: Oh, well, he can write it out and state it.

A. I would like to state that the formula I gave yesterday was my hypothetical formula based upon three factors that I have not as yet made the comparison analyses to form these three factors, which is usually considered pretty good chemistry, the formula would be this way:—

Mr. Butler: I move to strike out his answer as not responsive; I didn't ask him to define what he said yesterday.

A. C10H16NOCl. And for the other would be N2O3.

Q. Well, I know, but how is that gotten at, you don't mean —if you were teaching chemistry and say here you have a substance called flour, and here the compressed arrangement like a soda water fountain, or something like that, you have compressed gas equal NOCl, you don't mean to tell this court and jury that you have written on that blackboard the chemical steps to produce the result of bleaching, do you?

A. I do.

Q. All right.

A. The coloring matter in flour is C10H16, and that coloring matter is the substance that has this powerful effect over nitrosylchlorid, and therefore when that comes in contact with C10H16 it makes that.

Q. What are the three factors that you refer to?

A. These three factors?

1485 Q. Yes.

A. I didn't say there is three factors, I said the coloring matter is C10H16, as I make it out, in flour, and when that NOCl comes in contact with it it combines to make this new compound, and that is almost colorless.

Q. What nitrite or oxide of nitrogen does the bleaching?

A. Well, this is no oxide of nitrogen.

Q. Well, just before I asked you this line of questions about NOCl you say flour had to be bleached by the oxide of nitrogen or it would not bleach, that is the reason you knew that the nitrite in the air bleached it. Now, you say that you have invented a thing that does not use the oxide of nitrogen to bleach it at all?

A. That is true, the regular way of bleaching flour, it is done in a commercial way and is this way, there is your oxide of nitrogen made by the oxide process NO23.

Q. Oh, yes. A. That is the one I refer to.

Q. So then in this nitrosylchlorid you get old N2O3 in?

A. Old N2O3.

Q. So it is the same thing that bleaches it by the Alsop process, is it?

A. No, sir, the Alsop process was oxide of nitrogen, and the other is NOCl which is not a nitrogen.

Q. You did tell me yesterday that N2O3 was the thing which bleached in the Alsop process?

A. I have shown that in that last formula.

Q. Did you? A. Yes.

Q. Now, this formula here is the formula which results in your NOCl?

A. No, sir, that is the formula right above there, that is that formula for NOCl and that is the formula for the Alsop gas.

Q. Now, is it the NO which bleaches in the nitrosylchlorid?

A. It is the NOCl as a whole.

Q. The NOCl as a whole, Cl means chloride, don't it?

A. Yes, sir, but that is a definite compound, NOCl is a
1486 chemical entity, just as much as hydrochloric acid is one.

Q. Now, NO is an oxide of nitrogen, isn't it?

A. NO is an oxide of nitrogen, but not in that relation.

Q. I didn't ask in that relation, and it is made by the Alsop process, isn't it? A. NO is, yes.

Q. That is nitrogen that is made, isn't it?

A. Yes, sir.

Q. Which comes in contact with air it is NO2, isn't it?

A. Some NO2, and then a great deal of N2O3, according to my analysis.

Q. And these oxides of nitrogen are all poisonous, are they not?

A. When taken in sufficient concentration.

Q. Yes, I understand.

Q. Is chlorine gas a poison?

A. In sufficient concentration, yes, sir.

Q. Is chlorine gas a deadly poison?

A. In sufficient concentration, yes sir.

Q. Is table salt a poison?

A. When given in large enough doses it acts as a poison, yes, sir.

Q. Is flour a poison? A. When eaten raw, yes, sir.

Q. So, then, we have one substance that is a poison in and of itself, and it is flour, is it not, that is the only substance that you have mentioned as being a poison without qualification, isn't it?

A. I don't know about that, I said flour eaten raw, of course it is not a food, eaten raw in sufficient amounts of it, it acts as a poison.

Q. Would you according to the science that you understand and that I do not, would you say that you are scientifically correct when you say that strychnine is a poison and flour is a poison under like circumstances, to-wit, when you take enough of either, that is scientifically correct according to this science that you tell us that you understand and that we do not?

Mr. Elliott: The witness never said that, Mr. Butler. He was simply referring to that coloring matter.

Mr. Butler: He said I didn't understand chemistry,
1487 and he told the truth all right, he told the truth at that time.

Q. Well, according to your profession, then, according to your profession which I understand and which you understand, they insist that I understand it, and I will admit it, so as to get along, you think your answer is scientifically right when you put table salt and flour in the same category as chlorine gas, cyanid, prussic acid and strychnine, do you?

A. Well, there is a difference of degree, and of course the way you put your questions it would be impossible to answer it in plain and simple language unless of course you start out these different ones; flour is only a poison, raw flour, when eaten in large quantity, on account of its mechanical irritation to the mucous membrane like swallowing glass.

Q. Well now is bread a poison? A. Bread a poison?

Q. Yes.

A. No, I don't know of bread, that is food, that is food of course, that is made from flour but it is food.

Q. Is salt food? A. Up to certain quantity.

Q. Is food poison?

A. Yes, if you take too much of it, you bet it is.

Q. Is bread poison?

A. You can get a poison re-action from over-eating with bread.

Q. Is sand poison?

A. In a mechanical way it would be a poison.

Q. Is glass poison?

A. In a mechanical way it would be a poison.

Q. Can you name any substance that is not a poison?

A. Why, all depends of course on your premises, there is always that—

Q. I know. A. I went to answer you.

Q. Is there any substance which is not a poison?

Judge Scarritt: Just answer the question.

A. I answer it in this way, that I don't know of any one substance inherently of itself in a certain dose which is a poison; it is always a question of the test, the amount, the concentration, and other conditions that have got to be taken into consideration before you can call it a poison; all toxi-
cologists are agreed on that; you will find it in every
1488 text book on toxicology.

So as to be perfectly clear then if the old state of Missouri that it is a crime to administer any poisonous substance

to any person with intent to kill or injure that person, now, assume that is true, then when it was proved that strychnine in some amount not stated was administered, you could truthfully and conscientiously say that no poison was added unless you were told how much strychnine was given intending to kill the woman, if it was a woman couldn't you?

A. I would have to answer that in a scientific way, as I understand, and a physiological way, and then I would have to disregard the legal side of it because I know nothing about that, that would be for you.

Q. Well, now, as a scientist, that is what I am trying to get, I can answer the law of it and put the fellow in the penitentiary, that would be simple enough, but as a scientist?

Mr. Helm: Because of the intent would you—

Mr. Butler: Because of the poison.

Q. But now, as a scientist this hypothetical question is given to you? There was administered to Mary Doe strychnine; the proof shows that; Doctor, as a pharmacologist, toxicologist, analyist, expert on foods and pumper of stomachs, was there a poison given to the woman; what would you say?

A. Well, if I found strychnine I would say yes, I found strychnine, but I don't know whether it was given in a poisonous dose unless I find it in a poisonous dose I could not answer whether death was really the result from the strychnine administered unless I find enough strychnine there to account for it.

(Question read by the reporter.)

A. I would say that strychnine was given which in certain doses is recognized as a poison, and in other doses recognized as a very fine remedy.

1489 Q. Then if the question was put this way: We are unable to tell you how much strychnine the man gave the woman, would you be obliged to answer that you couldn't tell whether he gave her poison?

A. I would have to answer that way, I couldn't tell.

Q. And if it was a very minute dose of strychnine, less than an ordinary medicinal dose, you could in good conscience say that no poison was given?

A. I would have to say that no poison in that small dose was given because strychnine is not a poison except a dose—

Q. Yes, that is right, because strychnine is not a poison?

A. In such a dose as you question.

Q. So that if I would get enough to give Judge Scarritt in his food a little cyanide in every biscuit that Judge Scarritt should eat from now on till I leave town, and you were asked

by this court—assume that in each of these biscuits there was some cyanid—we can't tell you how much, then you would have to truthfully and conscientiously say: Until I know how much I could not answer as a scientist whether Butler gave some poison—

Mr. Scarritt: We object to that, if Your Honor please, just a stump speech before the jury, and for the reason that there is no evidence that there is any cyanid in this flour or in this case.

The Court: No, it is competent if there are two theories here, and I think he has right to illustrate and show the position that the witness occupies.

Judge Scarritt: He can show it by some relation to the case, and not make these stump speeches.

The Court: Well, the question is a little bit objectionable that way, but he may answer the main part, I don't care anything about these flourishes.

A. Well, I have one answer to make to that, and that
1490 is no substance which of itself can be recognized as a poison in small doses.

Q. Well, what do you mean, if it is given in less than actual physiological doses, then there is no poison, is that so?

A. It could not be considered as a poison.

Q. What is the most virulent poison known?

A. I should think prussic acid is the most deadly.

Q. You say prussic acid is a most virulent poison?

A. I know it, yes.

Q. There are some germs that are more poisonous, are there not, associated with disease, I am thinking of tetanus or lockjaw, that gives the lockjaw, somebody told me that that was a very bad thing, and a most terrible poison; is that so within your knowledge?

A. Why, tetanus, the tetanus bacillus of course is a disease —that is, it produces disease in men, it kills men, no doubt about it secreting a poison, but I don't believe the tetanus toxin itself would be considered as virulent as the living cell.

Q. Doctor, since we adjourned it has been suggested to me that the average fatal dose of prussic acid is one grain and of .... is one-twentieth of a grain, and aconitin is one-thirtieth to one-twentieth of a grain, is that right?

A. That may be right, that may be right.

Q. Aconitin would be twenty or thirty times as poisonous as prussic acid?

A. Well, in that respect, yes, of course I had in mind, the gas that you breathe, it is about instantaneous, I don't know just how much of the gas exactly you have to breath.

By Mr. Lyons:

Q. Couldn't hear you Doctor?

A. I said the gas, prussic acid gas, which we breathe, of course the effect of that is almost instantaneous; I did not figure just how much of that gas would be necessary, that is, take a grain or two grains, but I had in mind the rapidity with which it worked.

Q. Now, to further illustrate your position about
1491 poison, I understand you to say that no substance is in and of itself a poison, and you must have an idea of quantity, and the quantity must be such an amount that some physiological result would be disclosed to the observer.

A. Yes, to its deleterious effect either in one dose or in several doses given for a long, long period.

Q. I don't mean a single dose, that is, take it in any food, in which you are a specialist, no substance can be said to be poisonous until there is enough of it to show symptoms either by a single dose or for a continued period?

A. Yes, sir, or by constantly taking the poison.

Q. Now, let's see if we do not get into some practical difficulty in keeping our food pure, if it is true the nitrites may be taken in such quantities as to be injurious, I think we agree upon that? A. Yes, sir.

Q. So, then, if there is some in ham but not enough to be a poison some in turnips but not enough to be a poison, the New England dinner but not enough to be a poison, some in bacon, but not enough to be a poison, some in water but not enough to be a poison, some in flour but not enough to be a poison, you think that it still would be all right as long as there wasn't enough in any one of the things to be a poison, and that you could conscientiously swear that each one was free from poisonous substances unless the taking of one would show symptoms of injury?

A. Unless the taking of one would show symptoms of injury either at that time or by constant use of that substance.

Q. Yes, I know, so that the situation would be this: We will say we have half enough in ham to be poisonous, half enough in bacon to be poisonous, half enough in carrots to be poisonous, and there is none in the bleached flour to start with, but when we bleach it by the Alsop process we put half enough in the flour to be poisonous, then in a suit by the Government to prevent adding to flour, or to prevent adding to ham, or to prevent adding to bacon or adding to water, the inexorable mandates of your science would require you to say that
1492 no poison was added to either, am I right?

A. I would say that no poison was added to either in that sense, any more than nature adds a poison to that same flour when you age it, not a bit more, nature does the same thing.

Q. Well, I know, now, nature produces a great many things that we must avoid, doesn't it? A. A great many things.

Q. Like typhoid fever? A. Yes.

Q. Nature sometimes through seepage and other things perhaps pollutes the waters of the stream so that those who drink the waters take typhoid fever from it?

A. But nature does not do that but man does, man pollutes the water?

Q. By natural processes it occurs? A. Yes, sir.

Q. So that you would not argue that because such things occur by natural processes that these things might be added to food to make it still better without adulterating the food, would you?

A. I would not argue entirely that way, but since I am repeating in this flour bleaching exactly what nature does, then I feel I am following her exact ways and methods and which are so appreciated by the consumer that he wants a white flour.

Q. Is it within your knowledge that in cities by manufacturing plants nitrites are more common than in the country?

A. Well, I have heard that stated but I don't know whether that is true; I think the fresh country air generates just about as much nitrites as you get in the cities and there may be more because it is—this electrical phenomena that is going on all the time containing this nitrogen and oxygen air.

Q. It is by Mayberry that in the park regions of Cleveland, Ohio, which is a manufacturing town— A. Yes.

Q. There is, as I hold the figure in my mind, about 1.2 parts per billion of atmosphere, but that in the worst parts of
1493 the city by the factories by the decaying foods and excreta and so forth, where disintegration is taking place, that it is twelve times as bad. Now assuming that to be true, would that in your opinion [by] any reason why country air is more wholesome than the foul air of manufacturing cities where markets are not kept clean and the like?

A. Well, the foul air in the manufacturing city where they have this decay going on has nothing to do with the formation of oxide of nitrogen in the air.

Mr. Butler: I move to strike that out as not responsive.

The Court: Yes.

The Witness: Well, your assumption is one that I could not accept, sir.

The Court: But he is assuming that.

Q. I ask you to assume it for the purpose of your answer? Of course, I would not ask you to say it is true, because you don't know?

A. Scientifically, of course, your assumption is impossible, that is why.

Mr. Butler: I move to strike that out.

The Court: Yes, sir.

A. Well, I want to be honest with you, Mr. Butler, but I would like to answer it in an intelligent way; it is almost impossible to do it, that is the trouble.

Q. I see, it is but you can answer it? I will withdraw that and make it simpler. If the nitrites in this air in this room was multiplied by twelve, can you as a scientist tell us whether or not the air would be more wholesome or less wholesome by the increase of nitrites?

A. Well, there wouldn't be any difference in that amount as you put it.

Q. It appears in proof here that the dilution or concentration of the good flour, the flour seized, was a thousand
1494 parts to the million, now suppose we would add, make this air in this room contain a thousand parts of NO2 to the million of air, are you able to tell us whether the air would be made more wholesome or less wholesome, or whether it would not be affected by it?

Mr. Elliott: I object to that question as not properly reflecting the testimony, at least I have no recollection of any witness testifying that this flour was [bleach] with any such concentration.

The Court: Well, counsel has the right to put that. Ultimately that is for the jury to say whether the foundation is based upon testimony or not. In my ruling I am not holding whether that is so or whether it is not so. He may answer.

To which ruling of the court claimant then and there duly excepted.

(Question read by the reporter).

The Court: It amounts to this, assuming this to be so, whether it is or not.

A. Well, the air would for breathing would be less wholesome naturally, that would be too much of a concentration of NO2 in the air to breathe as air.

Q. It would kill people if they were kept in the room, would it?

A. For a long long time, yes, it would generally produce certain change.

Q. Asphyxiation, put hemoglobin in the blood and strangle them?

A. Eventually I presume that would do that with that concentration, yes, sir.

Q. The same as it does the moth?

A. They have not proved they killed any moth to me yet.

Q. Not to you? A. No.

1495 Q. Well, you are not on the jury. When you left the witness stand I wrote a chemical formula on the board, if you will turn around and look at it, I will propound a question to you in the light of that. At the top of the board is NOCl, that is your acid for the re-agent; the next is the formula which you say takes place when it bleaches; the next is the formula which you say takes place when Alsop process bleaches. Then I have written NOCl Nitrosyl chlorid, plus H2O—water—equals HCl hydrochloric acid and muriatic acid, plus HNO2. Is that chemical formula a possible chemical formula when NOCl comes into contact with water?

A. That is possible yes sir.

Q. HNO2 is nitrous acid, isn't it?

A. HNO2 as such is nitrous acid, but it would not exist —but it does not exist as nitrous acid, it would not exist as nitrous acid.

Q. Well, not isolated. Now when NO2 comes into contact with water it produces HNO2, doesn't it, and HNO3 in equal molecular parts? A. Yes, sir, it does.

Q. And if HNO2 takes on 1 of oxygen it becomes nitric acid, doesn't it? A. Yes, sir, it does.

Q. So then NOCl in contact with water produces nitrous acid just the same as NO2 produces nitrous acid when it comes into contact with water, doesn't it?

A. NOCl does with a certain amount of water, a sufficient amount of water.

Q. That is the formula I tried to have you write, but I did not understand it well enough to make myself clear. Now I want to ask you about N2O3, and I want you to answer fully and finally so I won't have to repeat, if you can, because I want to finish. What oxides of nitrogen are formed by the flaming arc in the Alsop process of bleaching flour, and give the formula for each?

A. The first oxide of nitrogen, that would be formed in the flaming arc when it comes in contact with the air would be nitric oxide NO, this NO would take up oxygen and form

1496 NO2, and then possibly N2O4 which is virtually the same thing, and then N2O3, that is you would get NO2 as one and N2O3, that is all I know of; there may be some more but that is all that I know.

Q. Is N2O3 a gas?

A. I believe it is under certain conditions.

Q. Is it a gas as made by the Alsop bleacher for bleaching flour? A. I think it is there, yes.

Q. What color?

A. I couldn't say, I have never seen it in sufficient concentration as made by the Alsop machine.

Q. Have you ever seen N2O3 as a gas anywhere?

A. I don't know that I have as a gas.

Q. What is the chemical process by which it is made by the Alsop machine? A. Well, it makes NO.

Q. Now let's go slow, we started out with NO? A. Yes.

Q. Then we add one of oxygen from the air which makes that NO2, that is nitrogen peroxide? A. Yes.

Q. The same thing that is mentioned in the patent?

A. Yes, sir.

Q. Now what is the next step?

A. Then you have some NO left which is in the NO2 which makes the N2O3.

Q. Just wait a moment, the next step would be, would it not, if water was brought into contact with it, nitric and nitrous acid?

A. Well, you would have the NO there too, but sometimes it would make N2O3.

Q. How is that.

A. You still have the NO2 there which would make N2O3. Your NO does not oxydize normally to NO2, not by any means.

Q. So you would mix NO?

A. You have NO and NO2, make N2O3.

Q. First then we have NO2? A. Yes.

Q. And NO2 plus NO makes NO3. A. N2O3.

Q. Now that is what takes place, is it?

A. Yes, sir, that takes place.

Q. And that is what bleaches?

A. And that I found to be the active bleaching agent.

Q. And you can't tell us whether it is a gas or a liquid?

1497 A. It is a gas as it comes from the Alsop machine it is mixed with the air certainly.

Q. What is its density, color and odor as it is, give any gases formed?

A. Well, I could not give it now, I have not looked it up.

Q. Can you give its density?

A. No, I don't know that.

Q. Can you give its color?

A. Well, I believe this compound is bluish or green at the time, that is, when it is in the liquid form.

Q. I am speaking of it as a gas?

A. Well, I think—

Q. There is no blue liquid used by Alsop to bleach flour, is there?

A. Oh no, no, not at all.
Q. Now let's stick to it then?
A. As I have seen it liberated of course it appears to be a sort of a reddish pale reddish color; now whether that is the pure N2O3 or not I don't know.
Q. What color is that?
A. Its natural color.
Q. It is pale reddish?
A. There may be some N2O3 in there or that may be only NO2, NO2 is very red.
Q. What do you think it was that made the flour obtained of Leflang, who manufactured the flour seized, give this odor that he described?
A. That was that compound I have written there on the board.
Q. You tell us it smelled exactly like the NO2 let loose in court here?
A. It smelled somewhat like it, but it is not the same, it might be everybody mistaken the compound as an odor.
Q. Are you familiar with the German work called the Gmelin Hand Book Inorganic Chemistry, 7th edition, published in 1907? A. Yes.
Q. Is that a reputable work?
A. I consider that a very good work, yes, sir.

By Mr. Lyons:
Q. Can't hear.
A. I consider that a very good work.

Q. At page 263 of that work it is stated that N2O3 does not exist as a gas, but that the liquid N2O3 on going to the gaseous state breaks up completely into nitrogen peroxide NO2 and nitric oxid NO in the presence of oxygen in the air NO goes to NO2, is that true?
1498 A. And NO in that same mixture, isn't it?
Q. Well, do you agree with the statement of the author?
A. I agree with the statement so far as he says that it breaks it up into NO2 and NO that makes the N2O3, you get that combination.
Q. Let me see, do you agree with this statement; N2O3 does not exist as gas; is that true or false?
A. I have never made the test, I presume the author has, I couldn't say, I couldn't say to my knowledge.
Q. Yes, it does exist as blue liquid you say?
A. Yes, sir, a blue liquid.
Q. And you say that no blue liquid is used to bleach this flour? A. Never seen any, no.
Q. But without knowing whether or not N2O3 exists as a gas at all you have sworn, have you not, over and over and

over again, that it was N2O3 that bleached this flour that was seized?

A. Certainly have done that, yes sir.

Q. When you don't know whether a thing ever existed or not how in the light of science can you swear that that thing bleached this flour?

A. That is very easy.

Q. I see it is.

A. Because I have tried absolutely pure peroxide of nitrogen, which I knew was pure this way, and that don't bleach flour, and then I have estimated how much N2O3 there was in this gas as you see it there, and how much NO2 and I found 75 parts of N2O3 and 25 parts of NO2.

Q. Was that N2O3 a gas?

A. I don't know what it was, it is in there.

Q. Was it a solid?

A. It was simply a mixture that gave that analysis.

Q. Was it a liquid?

A. It appeared to be a gas or a combination that is, as it comes from the Alsop machine.

Q. Did it have density?

A. Didn't go into that.

Q. Did it have color different from the Alsop machine?

A. Didn't see any color, the gas is not concentrated, I think.

1499 Q. All right, so then without knowing whether it had density, form, shape, color, liquid existence or solid, you do swear that it was N2O3 that bleached the flour?

A. N2O3 and I have made it direct from sodium nitrite right underneath this coloring matter in solution and liberated it before the air could strike it, and that bleached it, and that was N2O3.

Q. And you also agree with this statement from the Gmelin Hand Book of Chemistry that N2O3 does not exist as a gas?

A. Can not exist as a gas itself, it decomposes, but then you have NO2 and NO in the mixture and that may go as N2O3.

Q. Well, if N2O3 does not exist as a gas can the Alsop process bleach flour with N2O3 as a gas?

A. Because there it exists, as a gas, as I say in the Alsop process NO and NO2, that is they are separate but that makes the N2O3 and there it exists as a gas but not as N2O3 but NO2 plus NO makes that.

Q. I am sure that I do not make myself clear to you. If there is no such thing in existence as N2O3 as a gas, now assume that to be true, then I ask you whether as a scientist

can it be true that N2O3 is a gas and as such bleaches flour in the Alsop process?

A. It is the—

Q. Now can't you answer that yes or no, Doctor?

A. No.

Q. You cannot.

A. Why, the N2O3 could not exist as N2O3 in a gas, but it can exist as NO2 plus NO and that is what does the work in the Alsop machine.

Q. NO2 made at the flaming arc? A. Yes, sir.

Q. When NO2 comes into contact with the air as it goes to NO2?

A. And a lot of NO left in it which makes it NO plus NO which makes N2O3.

Q. The evidence in this case shows that the Alsop bleacher was some 30 feet—the gas machine, the gas producer, from the flour, that the NO2 from that was conducted by means of a pipe to a storage reservoir.

1500 A. NO2 or the NO, which now?

Q. NO or NO2, that the gas resulted. I want to ask you whether you are of opinion that the NO2 started from the flaming arc passing through?

A. It don't start there, it don't start there.

Q. I thought you said that was the first?

A. NO starts there and there may be—

Q. I misspoke myself, whether NO starting from the flaming arc can pass with the blast of atmosphere through the reservoir to agitator with the flour and remain NO all the time?

A. No part of it becomes NO2.

Q. Can any of it remain NO?

A. Oh yes, a great deal of it, oh, yes, that is where the books on chemistry have got something to learn yet, but you hold the NO changes into NO2.

Q. I see, the books on chemistry are mistaken on that?

A. No, they have not gone into that to the final point; I thought that was right too, but I found it was not exactly right.

Q. When did you find that out?

A. Oh, I have been working on that for the last two or three years.

Q. Was that before or after the hearing at Washington that you found that out?

A. I think I heard something from Prof. Snyder before on that point, and I may have looked into it myself after that.

Q. Was that before you found out that this Alsop process put nitrites in the flour or after?

A. I found out that the nitrites were not in the flour was after the Washington hearing.

By Mr. Lyons:

Q. Can't hear you.

A. After the Washington hearing about the nitrites on flour bleached by NOC1.

Q. Immediately after the flour be subjected to the Griess test will you get the nitrite reacting material?

A. You will get the nitrite reacting material.

Q. That is the Griess reaction?

A. Produced with the Griess reagent, because it consists of the same group that acts like a nitrite but that is not a nitrite.

1501 Q. The same reaction that you get on treating the Alsop process the same way, exactly? A. Yes.

Q. On testing the flour before it goes in, it will not give a reaction test, but after it comes out immediately it will?

A. Yes, sir.

Q. That is true, isn't it? A. That is true.

Q. But it is not nitrite?

A. That is not a nitrite, no sir.

Q. What is the difference between a mixture and a compound in chemistry?

A. Well, a mixture is simply a physical preparation which may be only mechanical and which does not relate to the chemical mixture a compound may be a chemical where there is two or more elements in combination.

Q. What is N2O3 a mixture or a compound?

A. N2O3 radicle is a compound.

Q. I am not talking about the radicle, I am asking about the substance. A. N2O3 is a compound.

Q. N2O3 is a compound but does not exist as a gas?

A. Not as I know of, no.

Q. Is it not understood by chemists generally that the mixture of NO2 and NO with air goes completely into NO2, and makes no NO, isn't that the chemistry of everybody of note on the subject?

A. Yes, I believe that is the way it is understood, but I know that NO and NO2 often go as N2O3 in making chemical reactions.

Q. Well, I know.

A. No other body comes in, and simply get by applying air it will all become NO2.

Q. Sir William Ramsey is a noted English chemist, isn't he?

A. Yes, and a very dear friend of mine.

Q. Does your dear friend Mr. Ramsey lay it down about in this way: that the mixture of NO2 and NO with air or oxygen goes completely to NO2 and leaves no NO left?

A. It will eventually, yes.

Q. That is the way Mr. Ramsey leaves it?

A. It will eventually do that, yes, sir.

1502 Q. And still you say that N2O3 is the gas which bleaches and also say that there is no such gas?

A. I say N2O3 is the gas that does the work, but it does not exist as N2O3 gas, but NO2 plus NO, that is the only way I could explain it.

Q. So it does not exist as N2O3 but as NO it does the bleaching? A. NO plus NO2 which makes N2O3.

Q. NO mixed with other things?

A. All the elements are there to make this compound when it comes in contact with this coloring matter making N2O3, yes, sir.

Q. And so after all it is the NO2 mixed with other things that does the bleaching?

A. It is the NO2 plus NO or N2O3 as such that does the work.

Q. Mixed with other things does the bleaching?

A. Well, it goes as N2O3 according to my analysis, yes, sir.

Q. But, I say, it is the NO2 mixed with other things that does the bleaching?

A. Mixed with NO, it does the bleaching with NO.

Q. But N2O3 is not a mixture but it is a compound, so you have told me? A. Certainly, yes.

Q. But now you say after all of your analysis you have reached the conclusion that NO2 mixed with NO does the bleaching?

A. That would be my deduction because it is N2O3 and its radicle that I find here does the bleaching, and I have liberated this N2O3 directly underneath a woolen sack containing this coloring matter, so that no air would come in contact with it, and as soon as that N2O3 was liberated the color went that quick, and I found that and got this N2O3 out of that coloring matter.

Q. May any one educated in chemistry write N2O3 as indicating a mixture, does that not indicate a compound?

A. That is such as a compound, yes, but you can also write it NO2 plus NO is a compound.

Q. You say it is the mixture that does the bleaching; you have said that it was N2O3 that does the bleaching, and you say N2O3 can not be used to express a mixture in chemistry, have you not?

1503 A. I have said that, and my analysis of the Alsop gas figures 75 per cent N2O3 and 25 NO.

Q. As a mixture?

A. As a mixture, and the gas comes through that, through the air that goes through the flaming arc.

Q. But you say that N2O3 can not be used to write a mixture?

A. It is not a mixture, N2O3 is not, because that is a compound, a chemical compound, I have seen the gas isolated as N2O3, now whether it could be as such in very infinitesimal particles analyzed or not, that is something I don't know, but it analyzed as 75 per cent N2O3 and 25 NO2; I never seen it, nobody else has seen it.

Q. You tell me you agree with these eminent German and English authorities that it does not exist as a gas?

A. Well no, but they say there is a compound of NO and NO2.

Q. No, a mixture?

A. Well, it acts like N2O3, sir; it acts like N2O3.

Q. Now give to the reporter in most exact and scientific way you can the details of your analysis by which you prove the Alsop gas to be N2O3? A. Well,

Judge Scarritt: I object to that as a repetition, as I understand it, it was done on the board there.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I drew the gas which came through the flaming arc or the discharge or the air containing the gas into a solution of alkali.

Q. What alkali? A. Just a normal alkali.

Q. What substance?

A. Sodium or potassium, don't make any difference, every chemist knows what the alkali is.

Q. Which one did you use? A. Sodium.

Q. What salt-sodium?

A. Well, just a normal, of course soda usually means the caustic soda.

Q. What is the formula?

A. NaOH. The air containing this gas was drawn through this normal caustic soda solution for a given volume.

1504 Q. What volume?

A. Well, I forget now; I have none of these details right here, you know, but I am telling how I did it, and this will be sufficient information for your expert to repeat it if they see fit to do it. Then I titrated the amount of alkali that was used up to these gases, understand, and I got a certain acidity then.

Q. What acidity?

A. I don't remember now. Then I titrated with the decinormal potassium permanganate.

Q. The formula?

A. KMnO4, and I found that I used a certain amount of this permanganate, hence it acts upon the N2O3 or potassium nitrate or sodium nitrate as I had it in this alkali to form the nitrate—

Q. What nitrate?

A. The nitrate of sodium in that case, of course I used caustic soda, and from that the total acidity, and from the amount of permanganate necessary to raise nitrous acid to nitric asid I figured out the amount of N2O3 that would be in that Alsop gas, and it was in the amount of 75 to 25 of NO2, and I know NO2 as such does not act upon the coloring matter at all, so it must be the N2O3.

Q. Did you titrate on the alkaline solution or acid solution?

A. Oh, I titrated on alkaline solution for the acid because I put in enough in there to have it remain alkaline.

Q. You have given the full experimental method?

A. I have given sufficient amount so that anybody can follow that out easy enough.

Q. Where did you get the gas?

A. In our laboratory up in our milling room.

Q. An Alsop machine?

A. We have an Alsop machine.

Q. How far from the flaming arc did you get the gas?

[—] I got that after it goes through a big tank.

Q. How far from the—

A. Oh, I should say probably 4 to 5 feet from the machine, but the gas goes through this tank.

Q. How long after it left the arc?

A. As soon as it would commence to come through with the blower, we took it just as it came through.

1505 Q. What was the concentration?

A. I don't know that, I have never estimated the concentration; I don't remember that now, I don't remember.

Q. You could not have forgotten it if you never knew?

A. Well, I don't remember, I may have taken the concentration of it, and I don't remember as I ever have, but I took the gas that blew through, and collected it for a certain number of seconds or minutes in this alkaline.

Q. You got an Alsop bleacher in your laboratory?

A. I got an Alsop bleacher up there in the mill, it is a small one for experimental purposes, just to study this process, the chemical action that takes place.

Q. You testified for the Alsop people in various litigation in fact?

A. I have only testified once for them and that is in their patent suit against the Naylor & Girard.

Q. You did not go to North Dakota for the Russell Milling Company when they sought to enjoin Prof. Ladd from enforcing the pure food laws of that State against the Alsop bleacher?

A. I did not go up there because I was in the hospital with appendicitis at that time.

Q. You say nitrogen peroxide does not attack coloring matter at all?

A. I have not been able to prove that it does; I have tried it in various ways.

Q. Does nitrogen peroxide attack any constituent of the flours?

A. I have not been able to determine that point.

Q. Does nitrogen peroxide attack the flour making the zantho proteic compound?

A. Why, it would, of course, if you pour it on, any peroxide would attack flour if you pour it on the flour.

Q. Does nitrogen peroxide made by the Alsop bleacher in certain quantities produce the zantho proteic compounds?

A. It may, providing you would run the flour through the agitator about 500 times.

Q. Or keep it in it? A. Or a thousand times.

Q. Now the bleaching time is half a minute?

1506 A. To go through the agitator?

Q. Yes, for one bleaching? A. Probably that.

Q. How is that?

A. I presume probably that much, yes.

Q. Five hundred minutes then, less than nine hours, would be the equivalent to putting it through there a thousand times?

A. I did not get that last.

Q. I say if you kept it in there about 500 minutes then according to your figures would give the zantho proteic reaction?

A. Well, if the flour was kept in constant agitation it is liable to.

Q. Is it necessary in order to get the NO2 made by the Alsop machine to keep the flour in constant agitation?

A. That is the quickest way of course, to bring about bleaching.

Q. If it adhered to the walls of the agitator it would not take it? A. It would not bleach it.

Q. Well, it would not take xantho proteic reaction?

A. Why, it might in time if there were sufficient moisture there; of course, you would have to have moisture with that, to bring about that, you know.

Q. Now in order to bleach it by the air would you have to keep shaking it too, or is that a different action in the air that will bleach without shaking?

A. Well, if you simply run the flour through a sort of a cyclone bolter about 4 or 5 times you bleach it just as quickly

almost, you would have to treat it with more air, take a little longer, but you get the same results, and you could get the same amount of nitrites or nitrite reacting material in there, but storing it you use the flour beds a good deal, and for that reason it is difficult for the air to come in contact with the coloring matter in the flour.

Q. So that as a matter of fact you don't need any flaming arc at all, all you need is the pure, pure air?

A. If you want to use enough pure air, and in sufficient quantity you would produce exactly the same result in regard to bleaching.

Q. If there be no nitrites in the air will it do it?

A. If there be no nitrites in the air it would be very
1507 doubtful whether that bleaching would take place, it is not the oxygen, it is not the oxygen.

Q. Now zantho proteic reaction means the yellow action on the protein? A. Yes, that has reference to it.

Q. Now the zantho proteic reaction means the yellow action on the protein? A. Yes, that has reference to it.

Q. The more you say the stronger the yellow?

A. Up to a certain point, yes, I should say so.

Q. And the yellow begins to increase before you can observe it with the naked eye, doesn't it?

A. I don't know about that; I don't know about that.

Q. If the testimony in this case is true that it does, that the yellow begins to increase step by step with relatively small amount of NO2 treating it, would you think that was the zantho?

A. Yes, but I don't believe you would get that until you get free nitric acid there; I don't believe you get that reaction until you get free nitric acid.

Q. But you never experimented to see?

A. Well, that is the way the zantho proteic reaction usually works; you have got to take the free nitric acid as free nitric acid; you get that point.

Q. I know that is the reason you are swearing that this is N2O3?

A. No, Mr. Butler, I think your experts will agree that the chemistry I have given you there, that that is sound, I am sure they will.

Q. Now if there be a little NO2 [2] added to flour but not enough to combine with all of the coloring matter in the flour, is there any zantho proteic compound formed?

A. I would say not.

Q. Not even a trace?

A. I would say not even a trace as far as the zantho proteic reaction is concerned.

Q. Yes, NO2 will combine with oil?

A. NO2 will combine with oil after a certain treatment and a certain amount.

Q. It will combine with the gluten?

1508 A. After you get a certain concentration there it will.

Q. It will combine with the color?

A. NO2, when you say NO2, I always wish to be understood N2O3, I wish that always to be understood.

Q. All right. Now assume that it combines with the color, the color is the base? A. The color is the base.

Q. The oil is a base? A. The oil can act as a base.

Q. The gluten can act as a base, can't it? A. Yes, sir.

Q. The proteins which includes the gluten? A. Yes, sir.

Q. Now is there a law of chemistry to the effect that if you add such a substance, such a radicle, in minute quantities, not enough to saturate all the bases, that it will distribute itself to the different bases, some going to the color, some to the oil, some to the gluten and the proteids, is there any such law as that in chemistry?

A. There is such a law in so far as it will go to that point that has the greatest affinity and the coloring matter has the greatest affinity.

Q. Is it a law that if there are several bases of different degrees of affinity and the radicle be introduced which is not sufficient to saturate any one, that it will all go to the one having the strongest affinity; is that the chemical law or is it the chemical law that it will combine with all of the bases for which it has an affinity, depending upon the quantity of the base and the strength of the affinity and the quantity of the radicle used?

A. No, I believe that the law is that it will go to the one with which it has the greatest affinity.

Q. No exception to that law that you know of?

A. There may be some exceptions but that is the general law, I believe.

Q. That is the law? A. I believe so.

Q. That is the law of mass action, is it?

A. I don't know whether you call that mass action.

Q. There is a law of mass action?

A. Well, with certain reactions that took place, though to be there a preponderable amount has got to be there, to bring about a chemical reaction.

1509 Q. That is the law of chemistry?

A. I believe that is the law, yes, sir.

Q. Now you said the coloring matter yesterday was terpene. I want to mark that down there so we won't misunderstand it at all, on this blackboard. I have learned that that word is sometimes spelled "terpene", is that the right way to spell it? A. Yes, sir.

Q. You told me the formula was what, I cannot remember that? A. As I figure it out now it is C10H16.

Q. Did you tell that yesterday? A. Yes.

Q. C10H16, that is 10 of carbon and 16 of hydrogen?

A. That is right.

Q. That is terpene, that is the coloring matter in flour, is it?

A. That is as near the formula as I can get now to terpene, hypothetically it figures the C10H16.

Q. The coloring matter in flour is yellow, is it not?

A. Yes, sir.

Q. Is the coloring matter of terpene yellow?

A. No, not the common terpene of nature, this is the new terpene.

Q. It is a new terpene? I think the chemists, as laid down by all of the chemical works in the German and in the English language say that terpene is colorless, is it not?

A. Yes, sir.

Q. And it is laid down that lots of time it turns yellow, rather rosin or resin, isn't it, that is the learning on the subject, isn't it?

A. As far as they know anything about turpene, that is as far as they have gone in terpene, yes.

Q. Do you know anybody in the world except yourself who ever went far enough to find the kind of terpene that is yellow until it takes on the reaction except yourself and your associates in the Columbus Laboratory?

A. I don't know of any one else that is investigating the subject as we have investigated it with this particular coloring matter.

Q. So that you have discovered a new kind of terpene?

A. Yes, sir, and we are the first ones that has ever gotten out the coloring matter of flour.

1510 Q. You discovered a new kind of terpene. Well, now, let us see about this, gentlemen, Hoffman has written a work on volatile oils, hasn't he?

A. I don't remember his name.

Q. Well, isn't he one of the most eminent living men on oils, don't you know that? A. You say so.

Q. Well, I don't know.

A. I don't think I ever read him on volatile oil, no, I have not had any occasion to.

Q. Had no occasion to? A. I don't think I ever read it.

Q. You are not familiar with it, so you don't know whether his work is any good or not at all?

A. I am not familiar with his work.

Q. But he lays it down that terpenes are colorless oil?

A. I know they do, but here is one that has color, and that is a new one, they didn't know that such terpenes existed in vegetable matter at all.

Q. Cushing, the same author that Mr. Elliott brought forward yesterday or a few days ago, in his work on Pharmacology, lays it down, does he not, that the terpenes are colorless?

A. I believe he does, that is true.

Q. And that after being kept volatile oils are generally clear colorless fluids, some of them are green from the presence of vegetable or small quantities of vegetable matters, while others are blue? After long keeping they often acquire a yellowish color and the acid reaction from the formation of resin; is that the truth?

A. That is the truth as far as those terpenes are [concern].

Q. As far as he learns?

A. In those kind of terpenes that would be correct.

Q. Now Richter's Organic Chemistry, Volume 2, is that a reputable work? A. Yes, sir, it is.

Q. [Is] is one of the best known in the world, isn't it?

A. Very excellent indeed, sir.

Q. He says the true terpenes when pure are liquids,
1511 strongly reacting liquids?

A. As they get them out of oil of turpentine and the citrus fruit too, that is as far as he goes, he don't know anything about the terpene in the flour.

Q. Many are oxydized by the oxygen of the air and they manifest a tendency to solidify? A. That is true.

Q. So then until your researches all of the chemical learning on the subject was to the effect that terpenes were colorless and by the lapse of time turn yellow, resolidify?

A. Yes, that is terpenes they get from the oil of turpentine and the citrus fruit.

Q. When did you first report the discovery of a new kind of terpene which starts up yellow and upon the lapse of time loses its color? A. Oh, I have been working on that—

Q. I didn't ask you when you commenced working on it. I ask you if you reported it to the chemical world?

A. I have not reported that as yet, sir. I would like to finish my answer, but I have indicated in several articles that I have written, that we have identified this coloring matter or have established a close relationship with it, but it was not the province of this article to go into the nature of the coloring matter, and that that would be taken up at a later date.

Q. Did you ever write down on any paper or cause it to be, or testify in any public place until yesterday, until today, that you discovered a new kind of terpene which is naturally yellow, and if so where is it that we may see it?

A. I have never published it, but I have spoken about this compound with Prof. Stiglitz, Professor of inorganic chemistry of the Chicago University.

Q. Now when did you first make it public that you had discovered a new kind of terpene which contrary to all the terpenes ever theretofore known was yellow instead of clear, turned yellow instead of losing its color by the lapse of time?

A. I made it public, if you call this being public, yesterday.

Q. For the first time? A. Yes, sir.

1512 Q. When did you discover the fact—

A. That it was terpene?

Q. When did you discover the new kind of terpene that started out yellow and loses its color, instead of starting out colorless and taking on yellow as the other proteins, when did you make the discovery?

A. I should say probably a year or possibly two years ago.

Q. Have you your notes from your experiments?

A. I think I could find them at home.

Q. Will you produce your original notes showing the details of your experiments by which you discovered the new kind of terpene that is yellow to begin with, does not resolidify, but loses its color as time goes on, will you produce those notes for our examination?

A. I will try and find them and produce them if you wish them.

At this point the further hearing of this cause was adjourned until 2 o'clock p. m.

Pursuant to adjournment, court met at two o'clock p. m., Tuesday, June 21, 1910, and proceeded further with the trial of said cause as follows:

Dr. John M. Wesner, resumed the witness stand.

The Court: Any further examination, Mr. Butler.

Mr. Butler: I believe not.

The Court: You may reexamine, Mr. Elliott.

1513 Redirect Examination

By Mr. Elliott:

Q. Doctor, I want you to explain to the jury, about the yeast apparently generating nitrites, on the one hand, and consuming them on the other hand. Now, take this Claimant's Exhibit 227. I believe you have testified that the nitrates that are in the water, are reduced to nitrites by the yeast. Is that correct?

A. That is true.

Q. And that, when the Griess reagent was put on there, it gave the coloration. A. That is true.

Q. Now, I will ask you this: assuming that you had allowed the yeast to act on that for a longer time than you did, what would have occurred?

A. The nitrite would have all been consumed by the yeast cell. The nitrite produced from the nitrate by the yeast is due to the enzyme, which each yeast cell contains, and this enzyme, which is secreted by the yeast cell, acts upon the nitrates, and makes nitrite. Then, the cell lives upon the nitrite, as food.

Q. So that, in this exhibit, 230, we then have, in this colorless fluid, as I understand it, an illustration of where the yeast has consumed the nitrites.

A. That is true.

Q. Mr. Butler put to you several questions, in relation to doses of nitrites. I want to ask you what relation, in your judgment, these medicinal doses of nitrites have to any substance in this flour in suit.

A. No relation whatsoever.

Q. I will ask you if you ever saw any flour that had been made yellow by being treated by this Alsop process.

A. No flour that has come to the Columbus laboratory for examination has ever been yellow, or made yellow by the gases from the Alsop process.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: That is not the question, Doctor.

1514 Mr. Elliott: I will repeat the question.

Q. My meaning is this: there has been some testimony that flour remaining in these agitators, after exposure for some length of time, turns yellow. Now, I am not dealing with that. I mean flour, as it has been passed through the agitator, as it is treated in the mill. Have you ever seen any flour, so treated, that was turned yellow by this Alsop process? A. I have not.

Q. I will ask you, Doctor, if, in determining the question of the poisonous properties of a substance, if you are influenced in coming to a conclusion, by the fact that such substance occurs normally in the human body. Would that be one of the factors?

A. That would be one of the factors to consider.

Q. Now, Mr. Butler made some remark to you, in reference to this corn starch case, that has bobbed up here once or twice, to the effect that you were fighting the commonwealth of Pennsylvania. I will ask you if Dr. John Marshall, who

testified for the government testified on the same side of the case as you did, in that case. A. He did.

Q. I will ask you, as long as the subject has been brought up, if it isn't a fact, as a result of the testimony brought out by the defendant in that case, that the attorney for the state himself asked the court to direct the jury to bring in a verdict for the defendant.

Mr. Butler: Just wait a moment. That is objected to as not proper examination, and especially for the reason that it appears that the question of injuriousness of nitrites was not up, and Marshall expressly said that he declined to testify in that case, at all, because he thought they were injurious. Now, they happened to be on the same side, but the result of that case, would not be material; and I further object to the assumption that I said that to Mr. Wesner. He plainly said that he was fighting the commonwealth of Penn-
1515 sylvania.

The Court: Oh, I recollect very well what Dr. Marshall testified.

Mr. Butler: He injected that. He injected Marshall.

The Court: Dr. Marshall told us expressly what he testified to there, and that he would not have testified to the contrary to what he testified here.

Mr. Elliott: I am not bringing that out, for a moment.

The Court: Well, just a moment. You might just as well. Then, if you ask this question, we have got to investigate the issues upon which that case was tried, and then determine whether it was decided right or not. There is no such issue there, as here. This objection is sustained. No such issue there, at all.

Mr. Elliott: Your Honor did not give me an opportunity to say a word.

Mr. Scarritt: I want to make this objection, if Your Honor please. The question was, to Dr. Wesner—

The Court: (Interrupting) The question is that Mr. Elliott is seeking to get this jury to believe that the government was defeated in Pennsylvania, and, therefore, this jury ought to so find.

Mr. Elliott: Not at all.

The Court: Well, just a moment, please. This question is very objectionable, offensively so. Objection is sustained.

Mr. Scarritt: We object and except to the remarks of the Court, and except to the ruling of the court.

The Court: We are not going to try such a fake issue as that.

1516 Mr. Scarritt: He asked him, if Your Honor please, if he was not down there fighting the commonwealth of Pennsylvania.

The Court: This objection is sustained. That is a false issue, that that question would seek to raise, here.

Mr. Scarritt: No doubt about it.

The Court: No such issue is before this jury.

Mr. Scarritt: We did not raise it.

By Mr. Elliott:

Q. Doctor, in bread making, I will ask you, is acid formed by fermentation?

A. Acid is always formed by fermentation, as a necessary step in the process of making bread. The acid acts upon the gluten, and gets the gluten in good condition, so as to make a good loaf volume, and bring about a greater resiliency to the gluten. Sometimes mineral acids are added, in order to bring about this rapid change in the gluten.

Q. Now, I asked you, on your direct examination, as to whether you had discovered or ascertained if any change was brought about in any constituent of the flour, by this bleaching process, and I understood you to answer no, and then Mr. Butler read to you several quotations from things you have said, or which was alleged you had said, in which you stated generally, certain things. I will ask you if there is any inconsistency between those two statements.

Mr. Butler: That is objected to as incompetent and immaterial.

By Mr. Elliott:

Q. I will ask you to explain those two statements.

The Court: I think the question is just calling for an explanation, about it. You may answer.

The Witness: Read the question.

1517 By Mr. Elliott:

Q. I will ask you to explain those two statements.

A. I find no inconsistency in those statements, the only change, as I have said right along, of any constituent in the flour which has been bleached, is in the coloring matter which has been changed. The gluten, and the other constituents in the

flour, are not changed. Of course, by passing flour through an agitator, and air coming in contact with the flour, a certain amount of moisture is eliminated, but that is not a change in any constituent of the flour. That is simply taking out some of the water. The only change is in the coloring matter, in that flour.

Q. And in naturally aged flour, does the same change occur?

A. The same change takes place,—loss of water, and the change in the coloring matter, which is a change, of course, in one of the constituents of the flour.

Q. I have understood from those quotations and excerpts from remarks, or testimony you have given, that you are on record as stating that bleaching produces the same change that aging does. I will ask you if that is your present opinion.

Mr. Butler: We object to Mr. Elliott's recital of his interpretation and understanding of the proof, and we object to that question particularly because it is leading.

The Court: Well, it is leading, but, nevertheless, he may answer.

(Last question read by the reporter)

A. It is my present opinion.

By Mr. Elliott:

Q. Now, Mr. Butler has interrogated you in reference to this flour that was exposed in your kitchen, and as to the possible volume of air that was used, or that would be necessary
1518 to be brought in contact with that flour, to produce four parts per million of nitrite nitrogen. I want to ask you how long did you expose that flour in your kitchen.

A. That one was exposed about two weeks. Two weeks, and other flours that I have exposed for twenty-four hours, have taken up as high as one part nitrite nitrogen in a million.

Q. You were asked about ammonium nitrite. I will ask you if, in your opinion, there is any ammonium nitrite in flour.

A. Not as far as I know.

Q. Is ammonium nitrite a volatile substance, easily volatile, or not?

A. No, it is not very easily volatile. It is a solid, at a low temperature, and a liquid at other temperatures, I believe.

Q. Now, I understand from Mr. Butler, he has been trying to bring out by you and other witnesses that this process introduces a poison into flour. Now, I will just ask you to assume that it does, and, on that assumption, I will ask you if, in your opinion, nature, on exposure of the flour to air, would introduce the same substance into the flour.

A. It certainly would do that, or does do that.

Q. You have also been interrogated at length in reference to the presence of poisons, in this N2O3 material, in the gas of the Alsop machine. I will ask you if it is a fact, well known in chemistry, that two substances may be together in what is called a state of dissociation. That is well known, is it?

A. Yes, sir.

Q. Take this nitrous acid gas. I will ask you if that has ever been isolated, as such. A. Not to my knowledge.

Q. Now, I want to ask you to further assume that the air passing through this Alsop machine, and treated by this electric discharge, is, or contains a poisonous gas. Just assume that. Does that fact have any bearing on the poisonous character of any compound or substance which may be found in the flour, as result of treatment with that gas?

1519 A. It would not have any bearing on any substance or compound formed in the flour with this particular gas, by the Alsop machine.

Q. Chemically speaking, would it be possible to take a perfectly harmless gas, and treat this flour with it, and produce poisonous compounds in it, on dissociation occurring?

A. Well, I don't know whether that would be possible or not. It might be.

Q. I just say chemically,—theoretically.

A. Yes, I would not say it would not be?

Q. Theoretically?

A. I would not say it might not be possible. It might be.

Q. And theoretically, it would be possible to take a poisonous gas, and have compounds from it, that were perfectly harmless, would it not? A. Absolutely so, yes, sir.

Mr. Elliott: I believe that is all.

Recross Examination

By Mr. Butler:

Q. What harmless gas will poison flour?

A. I do not know of any, right off-hand.

Q. What poisonous gas will not poison flour?

A. Well, N2O3.

Q. That is a poisonous gas?

A. That is, in sufficient concentration, it is a poisonous gas, but, in mild concentration it is not that. That would produce a harmless compound.

Q. What other poisonous gases will not poison flour?

A. Well, chlorine gas, in concentration, is a poisonous gas, but, in a diluted condition, it would not be a poisonous gas,

and that, however, would also make a harmless compound with the coloring matter of the flour.

Q. Can you name a poisonous gas that will poison flour?

A. I cannot, no.

1520 Q. So, no poisonous gas will poison flour, but harmless gases will poison flour, but you cannot think of which harmless gas will do it. Is that a fair statement of your testimony?

A. No, I do not think that is a fair statement.

Mr. Elliott: I understood him to say he could not name one, on the moment.

Mr. Butler: Well, that is what I say.

Q. What is the name of the enzyme in yeast, which reduces nitrates to nitrites?

A. I do not know as that enzyme has ever been named, but Professor Buckner, a German scientist, has extracted an enzyme which will convert sugar into alcohol, and carbon dioxide, without any live yeast cell figuring on the reaction.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: Yes. That is not responsive.

By Mr. Butler:

Q. Do you know the name of the enzyme which you say will reduce nitrates to nitrites?

A. I do not know the name, but I know it is the enzyme in the yeast that does it.

Q. Can you cite me to any authority which says that enzymes in the yeast change nitrates to nitrites. I mean, any published text book, or work. I do not mean anything that some of these witnesses have gotten up, to advertise bleached flour. A. I am the authority on that statement.

Q. You are the only authority known?

A. Yes. I can prove it to you, right here.

Q. I propose to take your word for it, if you say you are the only living man who knows that.

A. I do not say I am the only living man, but I am one of the authorities, because I have proved it myself.

Q. All right. State in detail your proof, scientifically, chemically, now, so that any chemist will know it, so we will have another addition to the chemical learning of the world.

1521 A. Thank you.

Q. To put along-side of the discoveries of the new kind of terpene.

A. Thank you. You are very complimentary, and I assure you I appreciate it. If you take the live yeast cell, and grow it upon nitrates, it would reduce them to nitrites. If you take that same live yeast cell, and stop its growth, with chloroform, and add nitrates in there, the cell does not develop any nitrites. It stops. The enzyme in that yeast cell will change the nitrates to nitrites. That is pretty good proof.

Q. And the same cell will change, and will destroy the nitrites?

A. If the cell is alive, it will eat up the nitrites, or destroy them. I think they feed on them.

Q. That is, this cell eats nitrites?

A. I think it is good food for the yeast cell.

Q. Is there any authority that you know of, aside from yourself, which says that nitrites are, as such, consumed by the yeast cell?

A. Well, I think if you will take the culture media, probably, of Louis Pasteur, you will find that the way he fed his yeast cells—

Mr. Butler: (Interrupting) I move to strike that out as not responsive to the question.

The Court: No. Answer the question, please.

A. (Continuing) I do not know whether Louis Pasteur said, as such, that the nitrites—or, said in so many words, that nitrites were food for the yeast, but I know he has fed mixtures of that kind, for yeast.

Mr. Butler: Wait a moment. I move to strike out the answer, as not responsive.

Mr. Scarritt: I object to it being stricken out, if Your Honor please, because it is responsive.

The Court: Well, now Doctor, go on and make your
1522 own explanation, and then go back to the question which, to me, is a very simple one. John Smith, or Richard Roe, wrote such a book, or nobody did. John Smith, or Richard Roe is an authority for that, or they are not.

Mr. Scarritt: Or somebody demonstrated it.

The Court: No, that is not the question. Some man living, or dead is or is not an authority.

Mr. Scarritt: Well, the question is unfair, then, if it does not include that, in the answer.

The Court: Well, let him say he cannot answer it.

A. (Continuing) I cannot say, in just so many words, just now, whether he did that exact thing, that yeast would live of

nitrites, but, I know that certain culture media used by Pasteur contain such body, and were put in there for the purpose of food for the yeast cell, and now, whether he says, in so many words, that those are foods for the yeast cell, I cannot say. I do not remember. He may have said it. That is the best answer I can give.

Q. Do you say that the yeast cells consume nitrites, directly, as such?

A. That would be my opinion, so far as I have gone in that work, Mr. Butler.

Q. Do you say that to be the fact and truth?

A. I would not say that is the absolute fact, but that is my opinion.

Q. You would not say that is the absolute, established truth, would you?

A. I could not say that, because there might be some other lower nitrogen compound formed.

Q. Do you know any man, living or dead, who has ever said—I mean an authority,—who has ever said that the yeast cell, directly consumes nitrites, as such?

A. I can only answer that as I have already answered it, to your first answer.

Q. Can you answer it yes or no?

A. I could not think of answering it that way, because it is impossible. It is impossible.

1523 Q. Now let me see if I understand the situation. I asked you if you can name any man, living or dead, who is an authority in chemistry, who has said, as a chemical truth, that the yeast cell directly consumes nitrites as such, and you say you cannot answer that question yes or no, do you?

A. I answer that question, now—I do not recall any at this time, but I believe I could find some authority that would say that.

Q. You cannot do that, now? A. I do not recall any.

Mr. Butler: That is all, Dr. Wesner.

Witness excused.

John E. Burgner, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. State your full name. A. John E. Burgner.

Q. What is your occupation? A. Practical miller.

Q. At what place? A. North Platte, Nebraska.

Q. How long have you been a miller, Mr. Burgner?

A. Thirty-five years.

Q. What is the capacity of your mill?
A. One hundred and fifty barrels in twenty-four hours.
Q. Do you use an Alsop bleacher in that mill?
A. Yes, sir.
Q. How long have you been using it?
A. It was installed in August of 1904. It will be six years in August.
Q. Six years this coming August? A. Yes, sir.
Q. I will ask you, Mr. Burgner, if you have ever
1524 noticed the color of the gas, or gaseous medium coming from this Alsop machine. A. I have noticed the gas.
Q. Have you ever seen any color in it?
A. Not that I could describe as color, no, sir.
Q. I will ask you if there is any pressure in any pipe coming from this Alsop machine. A. Practically no pressure.
Q. I will ask you if you have ever smelled flour treated by this Alsop machine, to ascertain if there was any odor in it, and if so, with what results.
A. I have. I have never been able to detect any odor in the smell of the flour.
Q. Where is this Alsop machine located in your mill, with respect to the agitator? How far from it?
A. About eighty feet.
Q. About eighty feet? A. Yes, sir.
Q. And what connects that with the agitator?
A. We have a two-inch galvanized iron gas pipe, wrought iron, with the exception of about two feet of rubber hose.
Q. Now, have you made any change in those pipes from the time that machine was first installed, up to the present time?
[Q]. We have not.
Q. Have you a sample of that iron pipe? A. Yes, sir.
Q. Let us have it, please.

The witness produces a pipe, which is marked "Claimants' Exhibit 240".

Q. I will hand you Claimant's Exhibit 240, and ask you if that is a section of the iron pipe you referred to. A. It is.
Q. What part of the apparatus did that pipe come from?
A. It came out of the electrifying room, about eight feet from the electrifying machine.
Q. About eight feet from the electrifying machine?
A. Yes.
Q. Do you use one of these tanks in yours?
A. Yes, but that is at the other end of the line.
1525 Q. This is between the electrifier and the tank?
A. Yes.

Mr. Scarritt: How long did he say that had been in use?

The Witness: Six years, in August.

By Mr. Elliott:

Q. Now, have you a piece of that rubber pipe you have referred to? A. I have.

Q. Now it is suggested that I ask you if the other pipe, of which that is a piece, as I understand it,—does that represent the specimen? A. Yes, sir.

Q. And would that, to your own knowledge, represent the condition of your pipes? A. Yes, sir, it will.

Q. Now, take this rubber pipe, which is marked "241". I will ask you what part of the machine this pipe comes from.

A. That is in the electrifying room, adjoining onto that short piece of pipe, which would be about four feet or six feet from the electrifier.

Q. And tell me why you use rubber pipe, at all.

A. To comply with the insurance requirements, as a matter of safety, from carrying any electricity up the main pipe.

Q. How long has this rubber pipe, Exhibit 241, been in use?

A. It will be six years in November.

Q. Now, I call your attention to some discoloration on the outside of that pipe, and ask you if you can explain what that is due to. A. I can.

Q. What is it?

A. This is oil. That is located so it comes directly under a shaft, up here, and little drippings, up here, falls onto that.

Q. Now, the gas from the Alsop machine passes right through this rubber pipe, does it? A. Yes, sir.

Q. And has been doing it for—

A. (Interrupting) Will be six years in November.

1526 Q. I hand you a valve marked "Claimants' Exhibit 242", and ask you to state what that is.

A. That is a valve that is used, about three feet from the agitator, between the tank and the agitator, for regulating the flow of the gas to the agitator.

Q. How long has this valve been in use?

A. Six years in August.

Q. All of these three exhibits have been in use substantially six years?

A. With the exception of the rubber, that was put in in November, later. When we first put the plant up, we put the pipe solid, and the insurance inspector came along, and requested us to put in that piece of pipe, in there.

Mr. Elliott: The exhibits are offered in evidence.

Q. Mr. Burgner, why do you bleach your flour?

A. To make it whiter, and gives better satisfaction to the trade.

Q. Now, just explain to the jury what you mean by giving better satisfaction to the trade.

Mr. Butler: I think we will object to that as irrelevant and immaterial, and move to strike out his answer,—that part which says "Gives better satisfaction to the trade"; as not germane to any issue formed by the pleadings in this case.

Mr. Elliott: The Court, itself, asked a gentleman here, "Why do you bleach the flour", and I want to bring out from this witness his reasons, if any.

The Court: He may answer that.

By Mr. Elliott:

Q. What do you mean by giving better satisfaction?

A. Well, I do not know that I can explain how it gives better satisfaction, but it does. People getting it—

Mr. Butler: (Interrupting) Just wait a moment. I think I will object to any hearsay narrative.

The Court: Oh, yes. We are not going into that.

1527 By Mr. Elliott:

Q. I will ask you if, in your judgment, flour is improved by bleaching it, and if so in what manner.

A. From my judgment, it is, to the extent that it gives them the same—puts it in the same condition that about ninety days of natural aging does.

Q. Now, Mr. Burgner, suppose you should take flour, ground from a new wheat, and bleach that flour—that new flour. Now, I want to ask you, how will that bleach flour, in your judgment, compare, in quality, with the same flour that might have been aged for, say ninety days, as you have expressed it?

A. It would compare very favorably. About the same.

Q. Now, before this flour is bleached, and when it is new, is it usable? Is it satisfactory to use by the baker, or housewife? A. No, it is not.

Q. And, after it is bleached, what then? A. It is.

The Court: I do not want to be misunderstood about a ruling a moment ago. Just let me ask a question.

Q. Do you brand your flour as bleached? A. No, sir.

Q. Do you let the people know it is bleached?

A. We do. We do not in any manner conceal it.

Q. Well, common people, like myself, going to the grocery store and buying it,—would they know it was bleached?

A. It does not say it was bleached on the sack.

Q. Do you advertise it as bleached?

A. No. I do not think we do.

Q. If it makes it better, why don't you advertise is as bleached?

A. Well, it has not been necessary to do it. The demand for it is sufficient.

The Court: Go on.

By Mr. Elliott:

Q. Have you ever had any dough balls in your flour?

A. No.

1528 Q. Do you know what they are? A. I do.

Q. Have you ever had any of them in your flour?

A. I have never had any that was to be attributed to the bleaching.

Q. No—I just asked you if you had ever had any dough balls in your flours, irrespective of bleaching, at any time?

A. No.

Q. What was your answer? A. No.

Mr. Helm: I did not get his answer.

Mr. Elliott: He said no.

Mr. Butler: He said no.

By Mr. Elliott:

Q. Now, I will ask you if you have made tests on bleached and unbleached flour, by means of baking. A. I have.

Q. And, comparing the loaf made from an unbleached flour, to a loaf made from the same flour, bleached, or from a bleached flour. Tell me, first, if, in your judgment, there is any difference in the odor between those two loaves.

A. After they are baked?

Q. Yes. A. No. I never could detect any.

By Mr. Butler:

Q. No difference in the odor after baking. Is that it?

A. In the bread.

By Mr. Elliott:

Q. Is there any difference in odor, in the flavor of the bread? A. Never could detect any.

Q. Is there any difference in the loaf volume?

A. I never perceived of any. I never weighed them, or measured for that.

Q. You stated that there was no difference in odor, before baking.

Mr. Butler: After baking?

By Mr. Elliott:

Q. After baking. Did you mean to imply by that, that there was a difference in odor before baking.

1529 A. No, I did not.

Q. Now, do you eat this bread, from bleached flour, yourself? A. I do.

Q. Do you use it in your family?

Mr. Butler: Oh, I think I will object to that as irrelevant.

Mr. Elliott: I think it is well enough to know that a man has the courage of his convictions.

Mr. Scarritt: That is the best test you can have.

The Court: No, that may or may not be so. I do not know about that. I may have been drinking milk, for years, loaded. Perhaps I have, but I am a tolerably robust man, yet. That would not be proof that formaldehyde was not harmful. I sustain the objection.

Mr. Scarritt: We save an exception.

Mr. Elliott: That is all.

Mr. Scarritt: Now, I do not quite understand that. Does your Honor rule that we cannot show that people use this bread, and eat this bread universally?

The Court: Do you think, Judge, that I ruled on that?

Mr. Scarritt: Well, I am just getting at it.

The Court: I say, do you think I ruled on that?

Mr. Scarritt: That was my understanding of it.

The Court: Well, you are mistaken. This is soon after dinner, you know, and the mind is not always active.

Cross-Examination

By Mr. Butler:

Q. Mr. Burgner, have you been a miller long, at North Platte?

1530 A. About nine years.

Q. How far west of the Missouri River is North Platte?

A. About three hundred miles. In that neighborhood.

Q. What is the annual rain-fall of that country, do you know? A. No, I do not.

Q. Well, I understand that, in some parts of Nebraska, far to the west, the rain-fall kind of peters out, and is pretty light.

A. That is right, some years, and others, it is different. This year, it has been heavier out there than it has in the eastern part of the State.

Q. But you are getting into the semi-arid region?

A. Yes.

Q. The North Platte region, I believe, is considered in the semi-arid country. A. Yes, so considered.

Q. What horse-power do you use to make this bleaching gas?

A. I do not know. We have no indicator, to indicate it.

Q. What is the horse-power of the equipment?

A. Five-horse-power dynamo.

Q. And the capacity is one hundred fifty barrels a day.

A. Yes, sir.

Q. If you run twenty-four hours? A. Yes, sir.

Q. About twelve barrels an hour? A. No.

Q. About six? A. About six.

Q. About six barrels an hour, and you are equipped with a dynamo of five horse-power, to make gas to bleach five barrels of flour an hour? A. Six barrels.

Q. Six barrels of flour?

A. But we do not use all of that.

Q. No, but you do not know how much you use?

A. No, I do not.

Q. Do you bleach all of your flour?

A. We do. That is, all the patent flour. We do not bleach the clears.

Q. Your clears contain such impurities that they cannot be bleached and mixed with the patent. Is that it?

A. We do not mix them. We do not mix our clears.

1531 Q. What percentage of clear do you make?

A. From about ten to fifteen.

Q. What brand do you sell it under?

A. We simply say no brand, or first clear. That is, it is put into jute sacks, mostly that way, unbranded, and sold as first clear,—clear flour.

Q. Did any of your customers ever come to you and ask you to bleach the clear, for them, to see if it would improve it?

A. Not to my knowledge.

Q. Any of your customers, who are consumers, come to you and ask you to bleach the patent for them, so it would make it better? A. Who are consumers?

Q. Yes.

A. Well, supposing the buyers—the people,—the merchants are, I would answer yes.

Q. Well, you would understand the difference between a flour broker, or a flour merchant, and a consumer, wouldn't you? A. Well, he is also a consumer.

Q. Now, except some one who was in the business of selling flour, did anybody ever ask you to bleach the patent, to make it better? A. No.

Q. What proportion of the time do you run your mill?

A. Well, we do not run—I stated that this machinery was shut down for four months, when it was moved. It was moved a half a mile. If was not in operation at that time, and it is not run continuously. It runs—it is in operation, perhaps two-thirds of the time, in the day time.

Q. In the last five years, have you averaged two-thirds of the time—that is sixteen hours out of twenty-four, on the average?

A. No, I said two-thirds of the day time.

Q. Two-thirds of the day time? A. Yes.

Q. That would be about thirty per cent of all the time?

A. I presume it would.

Q. Wouldn't it?

A. I have not put it into percentage, in that way.

1532 Q. What was your annual output, in barrels?

A. I do not know, now. I have not the figures with me.

Q. You haven't the figures with you? A. No, sir.

Q. How many barrels of flour did this pipe, which is marked "240", conduct the bleaching gas for?

A. I could not answer that, definitely.

Q. Have you any pipe here, that was near the agitator?

A. That valve was near the agitator.

Q. How near the agitator? A. About three feet.

Q. About three feet from the agitator? Are you interested in the Alsop Company? A. No, sir.

Q. Now, let me understand. Could you stop bleaching, if you wanted to, without tearing down your mill?

A. Without tearing down the mill?

Q. Yes. A. In what way do you mean?

Q. Dismantle your mill. Somebody told this jury they would have to dismantle the mills, to stop bleaching. Is that right? A. Oh, no.

Mr. Scarritt: I object to that, if Your Honor please, there is no such evidence as that, at all, and ask that it be stricken out.

Mr. Butler: Didn't counsel tell that to the jury?

Mr. Scarritt: You said it had been testified to.

Mr. Butler: No, I said somebody told this jury that.

Mr. Scarritt: Well, you assumed that some witness had told them.

Mr. Butler: No, I did not. Counsel told the jury that they would have to dismantle the mills, to stop bleaching. I want to find out if this is true, according to this man's experience.

The Court: He may answer.

By Mr. Butler:

Q. Is it? A. No.

1533 Q. All you would have to do, is to stop your gas maker, isn't that all? A. Take the belt off.

Q. That is all you would have to do, take the belt off, and save the power consumed in making the gas. Isn't that true?

A. Yes.

Q. Can you give this jury any idea of how many barrels of flour were bleached by the gas that passed through that rubber hose, which is marked "241"?

A. No, I could not. That is, no definite answer. There was two years that the mill ran sixteen to eighteen hours a day, steady.

Q. Now, have you found out that there is some heat generated by this flaming arc?

A. Yes, there is some heat.

Q. Have you found out that the air and gas, mixed together, when it is going through the hose, is hotter, and drier, than it is after it has been through the holder, and going for eighty feet to the agitator. Have you found that out, yet?

A. Yes, it is a little warmer.

Q. Have you found out, yet, that it requires water to make nitric acid out of this gas?

A. I have not. I am no chemist.

Mr. Elliott: I object to this, Your Honor. This witness has not qualified as a chemist.

The Court: No, he does not know.

Mr. Butler: All right. He has not found that out, yet.

Q. Before you get your bleacher, did your patent flour give satisfaction? A. Fairly well.

Q. Well, what I am trying to get at, did it give satisfaction?

A. Well, the very fact that we put the bleacher in, is evidence that it did not, fully.

Q. Oh, that is evidence? Well. Now, Mr. Elliott asked you about new flour. Is new flour inferior to what it will become if you age it?

A. It is not colored, as well.

Q. It is inferior, isn't it, in bread-making qualities?

A. Yes.

1534 Q. When you age it, it gets whiter, doesn't it?

A. Yes.

Q. Without bleaching? A. Yes.

Q. When you bleach it, you make it look like the aged flour, don't you? A. We do.

Q. You make your flour, made from the new wheat, that has not been conditioned, look like flour made from the wheat that has been conditioned, don't you?

A. Make it work like it, too.

Mr. Butler: I move to strike out that answer.

The Court: Yes, that is stricken out.

By Mr. Butler:

Q. You make it look like it, don't you? A. Yes.

Q. You make a long patent look like a shorter patent, don't you?

A. Not by the aid of the bleacher, necessarily, no.

Q. A long patent is darker colored than a shorter patent, isn't it?

A. Well, sometimes. That depends, altogether on the skill of the miller, and the equipment of the mill.

Q. Well, usually, isn't it? A. Yes, usually.

Q. So that, by a blast of this air, from this gas generator, you can reduce the color of that, somewhat, can't you,—of your long patent,—and make it whiter? A. Reduce the color.

Q. Yes. When I say reduce the color, I mean make it whiter. A. That is what we bleach it for.

Q. That is what you bleach it for, isn't it? A. Yes, sir.

Q. And you can adjust that, the more you bleach it, the whiter it gets, until you ruin it, doesn't it?

A. I could not answer that.

Q. Haven't you found out, yet, that the more gas you use, the stronger it will bleach? A. I have never ruined any.

Q. Oh, no, but you have found out, haven't you, that a little gas will bleach a little, and more gas will bleach a little more, and so on. Have you found that out?

A. To a certain extent, yes.

1535 Q. So that the miller may adjust the shadings of his color, to a certain degree, by this bleaching?

A. To a certain degree, yes.

Q. That is what you bleach for, isn't it? A. Yes.

Q. And it often becomes a matter of great delicacy, does it not, to determine just what shade of color it ought to be bleached to, and in order to do that, you have to slick it down, and compare it with the unbleached flour, or some standard, don't you? A. I have never had that experience.

Q. That has not happened in your mill? A. No.

Q. Some wheats make lighter flour than others?

A. Yes, sir.

Q. And, if you take a wheat that makes a dark colored flour, and bleach that flour, you can make that flour look about

as light as the flour made from the other wheat, which makes the lighter flour, can't you, in color?

A. State that question again, please.

Q. I will try to state it a little more clearly. Let me ask you this question. Do you know yellow berry? A. I do.

Q. Does that make as white a flour as the turkey red, that has no yellow berry in it? A. No.

Q. So, then, let us take yellow berry. It makes a little darker colored flour than the wheat that is free from yellow berry, doesn't it,—wheat of the same kind?

A. Well, that is absolutely free?

Q. Yes, that is what I mean. A. Yes.

Q. Now, if you make flour from yellow berry, you bleach it, and it gets white, too, doesn't it? A. Yes.

Q. And, if you bleach it just right, you can make it like, or very near like flour that is free from yellow berry—flour made from wheat free from yellow berry, can't you?

A. Yes, I think I can.

Q. So that, generally speaking, this bleaching may be so used as to make the flour from new wheat look like the flour made from old wheat; make the flour made from yellow
1536 berry look like the flour made from wheat free from yellow berry. Am I right? A. Yes, sir.

Q. And generally speaking, to use Dr. Wesener's expression, it standardizes the color, and makes the same color practically all over, attach to all kinds of flour, made from varying kinds and conditions of wheat. Isn't that true?

A. In a sense that is true, yes.

Q. Well, I mean in a sense. But, in the sense of color, that is true? A. Yes.

Q. You do not mean to say that, of course, if you took this Durum, that is used for macaroni, that you could make the same kind of wheat flour, with the aid of the Alsop bleacher, as they made from the nice, soft, winter, pastry flour-making wheats of Southern Missouri?

A. I do not know. I never ground any.

Q. You do not think you could do that, do you? You could not make the same texture, could you?

A. I never tried it. I never ground any Durum wheat.

Q. It does not change the texture of the flour, does it?

A. What?

Q. This bleaching gas.

A. I have never found that it did.

Q. All you have been able to discover about it is, that it changes the color? A. And makes it work better.

Q. Makes it work better? Well, makes the loaf volume bigger? A. Not necessarily.

Q. No, but as a fact.

A. It makes a more flaky loaf, to my mind.
Q. Better flavor?
A. No better flavor. No difference in the flavor.
Q. Do you smell this gas? Mr. Elliott did not ask you that. A. Do I smell it?
Q. Can you smell it? A. I can.
Q. At the place where it is made, if you opened it, so
1537 it can get out? A. Yes.
Q. In the bleacher, where the flour is bleached?
A. Yes.
Q. In the flour bin?
A. You can smell it if you open the door of the flour bin.
Q. Now, what do you think it is? Don't you think that the odor is in the flour? A. I do not.
Q. Well, now, tell me how you think that odor fills the flour bin, without getting into the flour?
A. The flour fills part of the bin, and the space between the flour and the top of the bin, is an air space, and the odor that is from the gas, rises out of the flour immediately, and fills that space.
Q. You are familiar with the smell of the gas that you get at the agitator or at the generator?
A. More so, at the agitator.
Q. Because that can be opened, I understand? A. Yes.
Q. Now, is that the same kind of gas that you smell, where the gas is made—same smell, I mean?
A. I could not answer that.
Q. You never noticed any difference, did you?
A. Where it is made, it is piped through. There is no opening in the pipe, and it is hard to get that, very often.
Q. You do get it, in the bin, every day you go in there?
A. Yes.
Q. Now, is it the same smell at the agitator, that you find in the bin? A. Yes, because they are very close together.
Q. Then, as I understand it, this flour, when taken in the hands and brought to the nose, does not give off the odor?
A. That is my idea.
Q. But, when the bin is about full of flour, that mass of flour, fills the rest of it? I do not mean more strength,
1538 but enough so you can smell it? A. Yes, sir.
Q. So then, it seems to you, does it not, from your practical observation, that this bleached flour, when found in a large mass in a comparatively small bin, does give off enough of this kind of gas that you smell in the agitator, so that you can smell it? A. Yes.
Q. So, you would say you would know, as a practical man, observing this from day to day, that this bleached flour, when

enclosed in a bin, does give off some small amounts of the bleaching gas? A. In the bin.

Q. In the bin? So that, if you would put it in a car, it would give it off in the car, wouldn't it? I mean, if you filled the car up and kept it tight?

A. If you would run it directly in the car from the agitator?

Q. Yes.

A. Perhaps it would, if it could not get away.

Q. Now you think it would not be strong enough to smell it, out of the sack? A. Oh, no.

Q. So, your idea is, that all of this gas escapes in the flour, in the bin? A. That is my idea exactly.

Q. And you know that it does escape?

A. I have never been able to smell any in the flour, and I have made many tests.

Q. But you know it does escape in the bin, which is the same old gas as you smell in the agitator? A. Yes.

Mr. Scarritt: I object to that as repetition.

Mr. Butler: I wanted to be sure there was no mistake about it.

Q. Did you ever try to bleach flour with the gas that is taken from the bleached flour? A. No, sir.

Q. Now, did you ever take a sample of flour that was
1539 not bleached, and make a loaf of bread of it?

A. I did.

Q. Then, did you take the same flour, not bleached, and wait for three months, and make a loaf of bread of that, and compare the two? A. No.

Q. Did you ever make any similar experiment?

A. I have baked the flour that was made—it was the same flour, but not the identically same flour—at the end of three months, and made the experiment.

Q. Does it make better bread at the end of three months, if you do not bleach it? A. It does, and it—

Q. (Interrupting) Makes a bigger loaf?

Mr. Scarritt: Wait a minute. And what?

The Witness: What is that?

Mr. Scarritt: You started to finish your answer.

The Witness: You asked me if it made better bread?

Mr. Butler: And you said it did.

A. I said it did.

Q. Does it make a bigger loaf?

A. I don't know as it does.

Q. Does it make a better flavor? A. No.
Q. In what respect is it better?
A. Just—whiter in color and lighter in texture.
Q. Yes? The gluten is better? The dough is better?
A. It doughs up better.
Q. If you bleach flour, and bleach it good, so as to give it a good, square bleaching, does it get better, on natural aging?
A. How is that?
Q. Does the bleached flour continue to improve?
A. It does.
Q. So that, when you bleach flour it continues to improve, just the same as the unbleached flour does? A. It does.
Q. So that, if you bleached a sample, and you keep it three months, alongside of an unbleached sample, for three
1540 months, they will both improve, step by step, and week by week, and month by month, for the three months?
A. That is my experience.
Q. That is your experience? Now, then, when you bleach flour, it takes about thirty seconds to bleach it?
A. About fifteen.
Q. Fifteen seconds? Does it improve the equivalent of three months natural aging, as Mr. Elliott and Mr. Wesner call it, the natural bleaching for three months—does it improve in the fifteen seconds just the same?
A. That is my experience.
Q. So that you get a double improvement. You put three months' improvement on it in fifteen seconds, don't you?
A. We do.
Q. And then in three months more, by natural aging, you put in another like degree of improvement on it, do you?
A. We do not have it then, usually.
Q. Well, I know, but if it keeps, somebody has it, if they do not eat it?
A. If they don't eat it, yes, if it is not consumed.
Q. Well, does the improvement begin on storage?
A. I said that it did.
Q. So that it not only improves when you bleach it, that artificially changes it, in fifteen seconds, equal to three months' time, but it improves some more? A. Yes.
Q. Improves just as much in those three months' time as it did in the fifteen seconds?
A. I would not want to qualify as to that.
Q. Gets it away on and beyond, much better flour than if it was not bleached at all? A. Yes. That is better flour.
Q. So that you say that this artificial aging is better than natural aging, because it improves it double the amount, don't

you? First, it improves it three months in fifteen
1541 seconds; and then, in the three months' time, it improves just as much as the unbleached flour? That is your say so about that?

A. I say that it improves it right along. The degree of improvement, I cannot say.

Q. No, but as nearly as you can get at it?

A. I cannot qualify as to the degree of improvement that it takes up.

Q. But, in other words, this bleached flour is made better than the flour unbleached, of the same kind, would have become by natural aging?

A. Well, I don't know as to that. There may be a limit.

Q. You think there may be, about this bleaching?

A. Yes.

Q. Well, so do I.

Mr. Butler: That is all.

The Court: Anything further, Mr. Elliott, from this gentleman?

Mr. Elliott: Just one or two questions I want to ask him.

Redirect Examination

By Mr. Elliott:

Q. Where do you get your wheat?

A. In Nebraska, mostly.

The Court: Western Nebraska?

A. Well, some of it. We ship some from Central Nebraska.

By Mr. Elliott:

Q. What wheat do you usually get?

A. We get what grades No. 2 hard winter.

Q. Is that the wheat we have had testimony about here, containing certain percentage of yellow berry? A. Yes, sir.

Q. Now, Mr. Butler has asked you to state, and you have stated, that with this bleaching process you can make
1542 a new flour look like a natural aged flour, make it look like it, and you said you could. A. Yes.

Q. I will ask you if it is like it, in your judgment.

Mr. Butler: Wait a moment. Now, he has testified that it is, in his direct examination, I think, and what is the use of repeating this all, over and over again?

The Court: He may answer it.

A. What was the question?

Q. I ask you if, as a matter of fact, it is like it, in your judgment. A. In my judgment it is.

Recross Examination

By Mr. Butler:

Q. By the way—yellowberry was mentioned in your redirect examination. Is that a diseased wheat?

A. No, sir.

Q. Is it better than the wheat that is not yellow, of the same type? A. No, I don't—

Q. Or, inferior to it?

A. I don't know as it is necessarily inferior.

Q. Do you belong to this millers' association that met here yesterday and passed resolutions and things about yellowberry? A. I do.

Q. Now, that was spoken of, was it not, as the problem of yellowberry?

A. I went up to the meeting.

Q. All right. You cannot say, on that. Now, I want to ask you this, whether or not farmers desire to avoid yellow berry?

A. I cannot answer that.

Q. Whether millers desire to avoid yellowberry, whether it is considered an objection, an improvement, or indifferent?

A. Not necessarily so.

1543 The Court: Oh, well, is it? Nothing is necessarily so. Is it better or worse, or the same?

Mr. Scarritt: Let him answer it, if your Honor please.

By Mr. Butler:

Q. That is what I am asking, is it better, worse, or the same?

A. We prefer the darker wheat, yes, sir.

Q. You prefer the wheat that does not contain yellowberry?

A. Yes, if we could get it.

Q. Why?

A. Because the flour is naturally a little whiter.

Q. The wheat is a little harder?

A. No. I think the hardest wheat I ever ground in my life, was the yellowberry.

Q. It will make more flour per pound? A. No, sir.

Q. So it is just in the color? A. Yes.

Q. Well, when you have the bleacher there, you can boss that color, can you, and you would just as soon [as] have yellowberry? A. Not necessarily.

Q. With your bleacher you could get it on the same footing? A. On the same footing.

Q. That is what you have a bleacher for, isn't it?

(No response).

Witness excused.

W. D. Vodrie, called as a witness on behalf of the claimants, being first duly sworn, was examined and testified as follows:—

Direct Examination

1544 By Mr. Elliott:

Q. Where do you live, Mr. Vodrie?
A. Omaha, Nebraska.
Q. What is your business? A. Baker.
Q. Are you a practical baker? A. Yes, sir.
Q. How long have you been in this business?
A. 42 years.
Q. Have you a bakery in Omaha? A. Yes, sir.
Q. What is the capacity of it?
A. About 2000 loaves.

The Court: I suppose he means a day?

The Witness: That is the capacity, 2000 loaves a day. I am not baking that much, at present.

By Mr. Elliott:

Q. Now, I will ask you if you ever had experience, Mr. Vodrie, with bleached and unbleached flours, in baking bread?
A. Yes, sir.
Q. What has been your experience as to the working qualities of bleached flour, compared with those of naturally aged flours?
A. Well, they are much about the same, excepting that when the flour is new, the bleached flour works better.
Q. Without referring to any particular kind of wheat, I will ask you this question: What has been your experience as to the working qualities of bleached flour, compared with those of naturally aged flours?
A. About the same, excepting the bleached flour is much whiter.
Q. Now, take a new flour that has been bleached. Now will such a flour compare, in baking qualities, with the same flour unbleached.
A. Much better.
Q. To what extent, Mr. Vodrie, have you used bleached flour, during the past three years.
A. One time, that I know of, there was a man told me that he had cut off some flour at a certain place; I don't know, put something in it.

Mr. Butler: I will object to this as hearsay.

1545 By Mr. Elliott:

Q. You have not understood my question. To what extent have you used bleached flour, during the past three years?

A. Once that I know of.

Q. You do not understand. A. Oh, bleached?

Q. Bleached flour.

A. Why, I have worked it continuously for nearly three years.

Q. That was bleached?

A. Yes; the unbleached I have only worked once or twice.

Mr. Butler: The unbleached flour once?

The Witness: Well, I mean one lot.

Mr. Butler: That is what you mean?

The Witness: Worked a few days out of it.

By Mr. Elliott:

Q. Now, as compared with your experience with bleached flour, what was your experience with the unbleached flour?

A. Well, I made very dark bread.

Mr. Butler: Well, wait a moment. I think I will object to that comparison, as wholly valueless unless there is something besides bleaching shown, it may have been a poor milling.

Mr. Elliott: Yes, and maybe the flour that Mr. Freeman spoke about was made from rotten wheat.

The Court: That goes to the weight of it. Bleached flour may be very much better than some unbleached flour, and vice versa. I do not know about that. At least, I am not saying, go on.

The Witness: Well, the bread was very dark, and I lost a good deal of trade by it; that is all I know.

By Mr. Butler:

Q. What is that?

A. I lost a good deal of trade by that.

1546 By Mr. Elliott:

Q. Have you ever had any trouble of any kind, arising from the use of bleached flour?

Mr. Butler: Objected to as irrelevant and immaterial.

The Court: What kind of trouble?

Mr. Elliott: In his bakery, I mean.

The Witness: No, I have not.

The Court: He can answer that.

By Mr. Elliott:

Q. Now, I want you to state if, in your experience, there is any difference in the odor, between bread made from flour that has been bleached, and bread made from flour that is not bleached? A. No, sir.

Q. Is there any difference in the taste?

A. Not that I can detect, at all. That is what I am careful about.

Q. I will ask you, taking a case of an unbleached flour, have you ever noticed any odor—and, by "odor" I mean unpleasant odor—coming from such a flour, from the oven, and if so, to what you attributed it.

A. You will get that, with either bleached or unbleached flour, if the dough is in a bad condition. It always makes the over sour, and a sour smell comes out, in case any dough that is over matured, it will be sour.

Q. It will give that smell?

A. Sour gas coming from the oven. I guess any baker will know that.

Cross Examination

By Mr. Butler:

Q. Mr. Vodrie, are you interested in the milling business, in any way? A. Not at all.

Q. Have you been a baker a long time, at Omaha?

A. Well, I have been a baker 30 years.

1547 Q. Are you alone in your business, or associated with others?

A. I am alone. I have had my daughter in with me, to some extent.

Q. And the business is carried out under your name?

A. W. D. Vodrie.

Q. Whereabouts in Omaha is your place of business?

A. 213 South 20th.

Q. You were, then, quite familiar with the wheat flours, before bleaching was practiced? A. I guess so.

Q. I understand it to be the truth that flours vary somewhat in color, depending on whether they are made a long patent or a short patent, or from new wheat, or conditioned wheat, or from one kind of wheat, or another kind of wheat. Am I correctly informed?

A. I do not know, because I know nothing about milling.

Q. Oh, you know nothing about milling?

A. Nothing at all about milling.

Q. Is it within your knowledge that a patent flour is generally and broadly speaking, better? A. Better, yes, sir.

Q. Is better flour than the straight? A. Yes.

Q. That, I take it to be because of the color of it, and the quality of the gluten, and gliadin in the flour?

A. No, I do not think so.

Q. Just the color? A. Let me hear that question, now?

Q. I say, I take it that the patent flours are superior flours, because of the quality?

A. Superior because I guess it is—

Q. (Interrupting) The quality of the gluten and gliadin?

A. Yes, a short patent is better than a long patent, yes.

Q. A short patent flour is, as a rule, if it is made from the same wheat, somewhat lighter in color, than a straight flour?

A. I know too little about that.

1548 Q. That would not be within your knowledge, but you know it makes better bread? A. Yes, sir.

Q. You know it makes better bread than the clear flour?

A. Yes.

Q. So, then, other things being equal, a short patent, down to say 50 per cent, is a good deal better flour than a clear flour containing only ten per cent?

A. I don't know much about those per cents.

Q. How does it compare with the clear flours?

A. I have always found it better.

Q. And it is better than the straight flour? A. Yes.

Q. It is better than the 90 per cent patent?

A. I suppose so.

Q. Makes better bread, doesn't it?

A. I think so. I don't know just what. I told you I didn't know anything about those degrees of patent.

Q. Oh, no, I do not mean to bind you down to any per cent, but a short patent, makes a better bread?

A. What millers term a "short patent", always makes better bread.

Q. Yes? It is a better colored flour? A. Yes.

Q. It is a better colored bread? A. Yes, a better color.

Q. A better grain, better mixture, better crumb, as they call it? A. Yes, and a little richer taste, too, I guess.

Q. If you were just going on the color, the bread, perhaps, will be as heavy, and all that, but it won't have the same fine touch, or taste, or color, or flavor, will it?

A. I suppose not.

Q. And that is true, in handling the doughs? You handle them, yourself, or have, during your younger years?

A. I have handled them. I stand over it, and I know how it is handled, all the time.

Q. Now, is it your idea that this bleaching makes a clear a patent? A. Makes a clear patent?

Q. Yes.

1549 A. It makes a flour that is white; makes a white loaf of bread, that the people prefer, to any other.

Q. Aside from the color, does this bleaching make patents out of clears? Is it your idea that this bleaching makes patent flour out of clears?

A. I would not think so. I do not know anything about that. I do not understand the bleaching process. I know with bleached flour I get bread that satisfies my customers better. They want the white bread.

Q. Now, when wheat is new, right from the harvest, the flour is not quite so nice, is it?

A. It has been very poor, always, until the last few years.

Q. But, if it ages, it gets so you can work it?

A. Yes, after aging, it will get better, of course.

Q. Now, I understood, in your answer to Mr. Elliott, that, taking flour that was new, but bleached—

A. (Interrupting) It works perfect.

Q. It would work just the same as the flour that was naturally aged? A. Yes, sir, it will.

Q. But that it would be very much whiter?

A. I did not say very much whiter. I say the bleached flour is very much whiter than the other.

Q. You said that bleached flour was much whiter than the naturally aged flour.

Mr. Scarritt: No.

Mr. Butler: He did so say.

Mr. Scarritt: No,—than the other flour.

Mr. Butler: Is that the truth?

A. I said that the bleached flour, new flour, it would work perfect.

Q. I am talking about the color. You said bleached flour was whiter than naturally aged flour? A. Yes.

Q. Before bleaching came in, a short patent would be whiter than the straight? A. Why, yes.

1550 Q. A naturally aged flour would be whiter than the fresh flour, made from the wheat? A. Yes, sir.

Q. The straight would be whiter than the clear?

A. All new flours?

Q. All new flours.

A. The straight would be whiter than the clear?

Q. Yes.

A. Oh, you mean the patent would be whiter than the straight?

Q. Than the straight, yes. A. Yes.

Q. And the straight whiter than the clear? A. Yes.

Q. Now, by bleaching it, the color does not indicate anything as to whether it is a patent?

A. All I know about it is making the bread. It makes the bread whiter.

Q. And you know that the bleached flour is whiter than the naturally aged flour? A. I suppose it is. I think it is.

Q. That is your observation?

A. It is, now. You know, we are not working the same flour. We are not using the same wheat that we did eight or ten years ago—twelve or thirteen years ago.

Q. I was just coming to that. Where do you get your bleached flour? A. I get it from the Skuyler mill.

Q. What brand is it? A. Puritan.

Q. Patent? A. Yes.

Q. How long have you used that?

A. I have used it for about—oh, I guess ten or twelve years. I have used it, I guess, when a good part of it was ground from spring wheat. It was then all right.

Q. Before it was bleached?

A. Yes, and I guess it had been bleached for several years before I knew it was bleached.

Q. What was this unbleached flour that worked so badly?

A. It was ground in Lincoln.

Q. How is that? A. In Lincoln.

Q. In what season of the year did you get that?

A. I got that about three months ago.

1551 Q. Made from old wheat?

A. I suppose so. There would be no new wheat yet, would there?

Q. And you say that worked very bad?

A. It made a very dark loaf of bread. Very dark, brown loaf.

Q. Flavor was bad, too?

A. Well, I know customers said so. I could not say as to that. I did not see the flavor. Of course, when a thing don't look good, it often tastes good, to their imagination.

Q. So, either from imagination or knowledge, the customers thought that this lot of flour that was unbleached—the only lot that you have used of unbleached flour in four years, made a very inferior bread?

A. Three years, I said.

A. Made bread very dark and unsalable for me.

Q. And you lost your trade by it?

A. Yes, sir, I lost a good deal of trade by it.

Q. Do you advertise?

A. I never advertise, only with the goods.

The Court: Sir?

A. I never advertise; the goods is all the advertising I have.

By Mr. Butler:

Q. Do you, yourself, handle the dough, now?

A. I look after it, a great deal. I do not work in it, at all.

Q. You do not work in it at all? A. No.

Q. How long since you ceased to?

A. Oh, I worked in it, now and then, but I don't make a hand, in the shops. Sometimes a man is sick, and I work.

Q. I mean, regularly. How long since you worked regularly? A. About ten years.

Q. What was your daily output, ten years ago?

A. I could not remember.

Q. About.

A. I think in the neighborhood of about 500 loaves of
1552 bread.

Q. And it is about 2000 now?

A. No sir, you asked me my capacity.

Q. Oh.

A. No, sir; my trade now is light. A little light.

Q. About how many loaves?

A. Somewhere in the neighborhood of 700 a day. In the winter, about 1000 to 1100. I have a hot bread proposition. I sell more in cold weather than I do in hot.

Q. Hot bread?

A. Yes. I sell a good deal of hot bread. I bake often.

Q. You never were in a flour bin filled with bleached flour, were you? A. Which?

Q. Were you ever in a flour bin that was filled with bleached flour? A. No.

Q. So, you do not know how the bin containing the bleached flour smells?

A. No, I do not know anything about it. I run it through a sieve and mix it through a mixer, and it raises a big dust, and it looks like if there is any smell there, I would get it.

Mr. Butler: That is all.

Redirect Examination

By Mr. Elliott:

Q. Mr. Vodrie, I understood you to say, in answer to Mr. Butler's question, that you sell a good deal of hot bread?

A. Yes.

Q. I will ask you if you have ever had any complaints from any source from your hot bread having a bad odor? A. No.

Mr. Butler: Just a moment. We will object to that as hearsay, and as incompetent, irrelevant and immaterial. I have not understood, and I will not repeat the objec-
1553 tions, if the Court has indicated this position, but I have not understood that it has been ruled in this case

that these dealers or brokers in flour may testify to what their customers say about it.

Mr. Elliott: I will withdraw the question.

The Court: Very well.

By Mr. Elliott:

Q. I will ask you if such hot bread has any unpleasant odor? A. None.

Recross Examination

By Mr. Butler:

Q. Do you think bleaching improves the odor?

A. Odor? I do not see that it has any odor about it, either bleached or unbleached.

Q. You never detected any odor in any bread, from flour bleached or unbleached?

A. Well, when the dough is in bad shape, I have.

Q. But I mean good bread?

A. No, I did not, any unpleasant odor.

Q. So, you say the bread hot or cold has no odor, if it is made either from bleached or unbleached?

A. It has a smell, as a matter of course, but not a bad odor.

Q. Now, does the bleaching of flour improve the smell?

A. I would not think it would.

Q. I wouldn't, either. A. No, I do not think it would.

Witness Excused.

1554 Frank Earl Roth, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. Mr. Roth, please state your full name.

A. Frank Earl Roth.

Q. Where is your residence? A. Lincoln.

Q. What is your occupation?

A. Secretary and Manager of the Cootch Milling & Elevator Company.

Q. And where is that located? A. Lincoln, Nebraska.

Q. What is the capacity of your mill?

A. 300 barrels. We are now remodeling to make it 700.

Q. Do you use an Alsop bleacher in that mill?

A. Yes, sir.

Q. How long have you been using it?

A. Since we started, nineteen months.

Q. Nineteen months? A. Yes, sir.

Q. That is, when the mill was started? A. Yes, sir.

Q. Have you, since the machine was installed, had to make any change of the piping, at all? A. No, sir.
Q. Or have you made any such change? A. No, sir.
Q. Do you still bleach your flour? Are you bleaching it now? A. We did, up to the time we shut down to remodel.
Q. Now, I will ask you why you bleach your flour.

Mr. Butler: That is objected to as irrelevant and immaterial.

The Court: He may answer.

A. We bleach it because the trade demands flour that will make white bread, and because it enables us to put our flour on the market, aged, rather than to leave it in the mill, unbleached, until it ages properly to make white bread.

1555 The Court: Well, then, you simply do that to save time over natural bleaching; is that it?

A. Yes, sir.

Mr. Scarritt: Time and money?

A. Time and aging.

By Mr. Elliott:
Q. You are not, yourself, a practical miller?
A. No, sir.
Q. You are the Secretary and Manager of this mill?
A. Yes, sir.
Q. Now, have you a sample of the bread made from the flour you grind, bleached and unbleached?
A. Yes, sir.
Q. I hand you Exhibit 243 and 244 and ask you to state what they are.
A. Exhibit 243 is bread made out of unbleached flour, and Exhibit 244 is bread made out of bleached flour.
Q. Made out of the same flour?
A. Both made out of the same kind of wheat, from the mill, one taken before the bleacher, and one taken after the bleacher, made a little over a week ago.
Q. Where were those loaves made?
A. At the Southwestern Flour Testing Laboratories in the Exchange Building, at Kansas City.
Q. And by whom, if you know? A. Mr. Esterbrook.

Mr. Butler: Who made that bread?
A. Mr. Esterbrook.

Mr. Butler: Here in Kansas City?
A. Yes, sir.

By Mr. Elliott:

Q. Exhibit No. 244 is, you say—

A. (Interrupting) This is the bleached flour, and this is the unbleached flour.

Q. 243 is the unbleached? A. Yes.

(Witness hands exhibit to the jury.)

Mr. Butler: Now, just a moment. I am going to object to the use of these until the foundation is laid.

1556 Mr. Elliott: What kind of a foundation?

Mr. Butler: I want to find out who made them, or how they were made.

Mr. Elliott: I have just told you.

Mr. Butler: All right; make your offer, and do not use them until they are admitted in evidence.

By Mr. Elliott:

Q. Who made these?

A. Mr. Esterbrook. He is the chemist, I understand, of the Southwestern Flour Testing Laboratory.

Mr. Scarritt: If they require it, if Your Honor please, we will fill in that gap, the same as they did about Miss Wessling's bread.

Mr. Elliott: Well, I offer the exhibits in evidence.

Mr. Butler: They are objected to, no foundation having been laid, and if there be any doubt of the sufficiency of the foundation, I ask permission to inquire.

The Court: You may cross examine him on that.

By Mr. Butler:

Q. Did you bring this flour here, yourself? A. Yes, sir.

Q. For the purpose of having it made up in bread, for evidence in this lawsuit? A. Yes, sir.

Q. When did you come here? A. Yesterday morning.

Q. When was the flour milled?

A. The flour was milled a week ago Saturday.

Q. Milled for the purpose of making this test?

A. No, sir, from the regular run.

Q. Did you see this bread made?

A. No, sir, I did not.

Q. Do you know the man who made it? A. No, sir.

Q. Can you recognize that flour, in any bread that it happens to be in? A. No, sir.

1557 Q. So that you cannot tell whether that is your flour or not, can you?

A. I have his word for it. He is a professional man.
Q. That is all you know about it? A. Yes, sir.
Q. And he is a chemist? A. Yes, sir.
Q. And not a baker, at all, except a chemical baker, and experimental baker, isn't that it?
A. Yes, sir.

Mr. Butler: We insist upon our objection.

Mr. Scarritt: Now, he is here, isn't he?

The Witness: He is in the city.

Mr. Scarritt: We will have him here and fill that in, if your Honor please.

Mr. Butler: I think it is time to introduce the bread, then. This gentleman is not a practical miller or baker. He is simply the Secretary.

The Court: Certainly. Mr. Elliott, I do not think you have supplied the proof necessary.

Mr. Elliott: Well, we will lay that aside, for the moment, your Honor.

The Court: They are identified, and you may put them to one side.

Mr. Scarritt: If your Honor please, if we say that we will fill in the evidence, isn't that sufficient?

Mr. Elliott: I will bring Mr. Esterbrook here.

The Court: I am not doubting your word, of course.

Mr. Scarritt: Well, I understand it, but in order to save time—

The Court: (Interrupting): Well, put them in, then, but the way we stand now, we do not know anything about what the jury is looking at.

Mr. Scarritt: The same as it has been, all through the case.

The Court: Now, there you go again.

1558 Mr. Butler: In order to get the record clear I now move to strike out that part of the witness' testimony which is to the effect that this flour is contained in these loaves of bread, 243 and 244.

The Court: I admit these in evidence upon statement of counsel, while not so broad as I make it, with the understanding that it is made precisely in one and the same way, and in all respects alike, so they may be admitted in evidence with

that evidence to follow. If one had more water, or more something else, of course they become utterly valueless.

Mr. Scarritt: Now, if your Honor is going to put it that way, we will just wait until we get the evidence, because we do not want to be put in the position of being hung up, on a spoonful of water.

The Court: It isn't a spoonful. You misunderstood me. I did not use the word "spoon". We have been told by some witnesses here how bread is made under different circumstances—

Mr. Scarritt: I understand that, your Honor, but it is always customary, if we said we would supply the evidence.

The Court: Your word is perfectly good, and I admitted them, Judge.

Mr. Scarritt: Well, you make it too strict. We might fall down.

The Court: Let them go in as evidence. Go to something else.

By Mr. Elliott:

Q. Now, I will ask you to say again which is which—243 is the unbleached and 244 the bleached; is that correct?

1559 A. 243 is the bleached, and 244 is not bleached.

A Juror: I understood you to say your mill is shut down, and not running.

The Court: They are rebuilding it.

The Witness: Yes, sir, shut down now.

Mr. Scarritt: Since when?

A. A week ago last Monday morning, we shut down.

By Mr. Elliott:

Q. I will ask you if you have a sample of the pipe and of the hose that you used in your mill? A. Yes, sir.

Q. Will you get it, please?

(Witness produces the articles requested.)

Q. Now, I hand you a section of rubber pipe, and ask you to state what that is.

A. That is a section of hose that contained the bleaching gas from the electrifier into the galvanized iron pipe, that took it to the agitator. That is, the bleaching gas passed through that, from the electrifier. It went through that, first.

Q. I will ask you if this pipe, which I mark Claimant's Exhibit 245, has been in use since you installed the Alsop process? A. Yes, sir.

Mr. Scarritt: How long has that been used?

A. Nineteen months.

Mr. Elliott: I offer this in evidence.

Q. Now, I hand you a piece of iron pipe, marked Claimant's Exhibit 246, and ask you to state what that is.

A. That is a piece of galvanized iron pipe that carries the bleaching gas into the agitator, taken, I should say, about three feet from where the gas entered the agitator.

Q. How long has this iron pipe been in use?

A. Ninteteen months.

Mr. Elliott: I offer this in evidence.

Q. Now, tell me why you use this rubber pipe, or do you know?

1560 A. Yes. On account of the insurance requirements. It is a non-conductor, and won't conduct electricity from the electrifying machine into the pipe.

Q. As I understand it, this rubber pipe, 245, is put between the electric generator and the iron pipe, of which Exhibit 246 is a section? A. Yes, sir.

Q. I will ask you if this Exhibit 246 is a specimen of the pipe in actual use, and represents the condition of that pipe, so far as you know?

A. Well, I will say that, in dismantling the mill, when that came apart, it was allowed to lay in rather a dusty place, and there might have been a small accumulation of dust, that was not there when this was disconnected.

Q. But, otherwise?

A. Otherwise it is just as it was taken from the bleacher.

Mr. Elliott: That is all.

Cross-Examination

By Mr. Butler:

Q. How many agitators are connected with your bleacher?

A. Two.

Q. One for patent, and one for clear? A. Yes, sir.

Q. You bleach both? A. Yes, sir.

Q. Which one was this pipe connected with?

A. Both were connected with the same lead. One was simply a leader from the main pipe.

Q. Well, this iron pipe was the pipe going into one agitator, was it? A. No, that was the lead, there.

Q. That was the lead? A. Yes, sir.

Q. How far is your agitator from your generator—from your gas factory?

1561 A. About 34 feet.

Q. About how far from the tank?

A. About six feet.

Q. And this man next to the tank?

A. That was between the tank, and—

Q. (Interrupting) Have you two agitators side by side?

A. Yes, sir.

Q. One for clear flour and one for patent?

A. That is, our best flour.

Q. And this was a part of the stub connection with the tank? A. Yes.

Q. And how long is that stub?

A. I do not understand you.

Q. Well, you have a pipe running out of the tank, and it then divides into two parts, and one goes to one—the clear agitator, and one goes to the patent agitator. Now, how long is that pipe?

A. Well, the lead pipe runs right along this way, and, about six inches from this pipe, which runs into the large agitator, and then it comes up here, about six inches, into the small agitator.

Q. For instance, we will call this the lead pipe, and you would have one out here and one here (indicating)?

A. Yes.

Q. And a valve in each place? A. Yes.

Q. Now, where would that piece come from? We will call this the tank, here.

A. Yes, that would go in, over here.

Q. And we will call this the clear, and that the patent.

A. Well, it is just the other way. This is the patent and this is the clear (indicating).

Q. Well, now, which one is that?

A. That came off of the main pipe.

Q. Why did you select galvanized iron, instead of common iron? A. I do not know.

Q. No? Who did that for you?

A. I think the steam-fitter put it up.

Q. What is that stuff inside there?

A. I do not know.

Q. Did you ever clean out your pipes?

A. I do not know.

1562 Q. This pipe may have been cleaned out a week before you came here, for all you know.

A. I do not think it was.

Q. I know, but you said you did not know.

A. I do not know.
Q. Who asked you to bring that pipe here?
A. Why, I brought it at my own instance.
Q. Who asked you to bring it here? Did you just bring this yourself?
A. After reading the testimony, yes, sir.
Q. Where were you, when you read that testimony?
A. I was in Lincoln.
Q. Now, this dust that you speak of, was that inside or outside the pipe?
A. Might have been on either.
Q. Was it something that came out of the inside of this pipe, when you took it out?
A. No, sir; I did not investigate it.
Q. Were you there when it came out? A. No, sir.
Q. So, you do not know, do you? A. No, sir.
Q. For all you know, this miller may have cleaned it out, who took it out?
A. Yes, we can find it out.
Q. Yes, you can ask the miller. Did you bring here the miller who took it out? A. No.
Q. Anybody here who knows how often this pipe was cleaned out? A. No, sir.
Q. Anybody here who knows how often the rubber hose was cleaned out? A. No, sir.
Q. Nobody here who knows whether you had to clean out your agitators or not, to get the yellow flour out of it?
A. Not as far as our agitators are concerned.
Q. Anybody here who knows about that?
A. Not about our agitators.
Q. Well, that is what I mean by that. A. No, sir.
Q. So far as you know, your agitators keep clean of
1563 this yellow flour?
A. So far as I know, yes, sir.
Q. Have you ever seen the yellow flour? A. No, sir.
Q. Have you ever smelled the gas? A. Yes, sir.
Q. Where?
A. I have smelled it in the bleaching arc, and I have smelled it in the flour bin.
Q. In the flour bin? A. Yes, sir.
Q. Where bleached flour is stored, it gives off gas, so you can smell it?
A. No, sir; it isn't stored. It is run into the bin.
Q. Well, I mean, where it is put?
A. Where it runs through, yes.
Q. I did not use "store" in the sense that it stayed there a long time? A. Yes, sir.
Q. So that the flour fills the bin with the gas?

A. You can smell it?
Q. Yes? You know the smell of nitrogen peroxide?
A. I do not. I know the smell of the bleaching gas.
Q. And that is the bleaching gas you smell in the flour room?
A. Yes, sir, that is, in the flour bin.
Q. Did you ever have any of this sediment which accumulates in this thing, analyzed, to find out what it was?
A. No, sir.
Q. You do not know, do you? A, No.
Q. Did you ever see an iron pipe that was used for conducting this bleaching gas from the Alsop to the bleacher?
A. No, sir.
Q. Well, here is one, used at Krite's mill, East St. Louis.
A. Yes, sir.
Q. Is it within your knowledge that nitric acid will eat out an iron pipe, a great many times faster than it will a galvanized iron pipe? A. No, sir.
Q. You do not know that? A. No, sir.
Q. How many barrels of flour were bleached by this Alsop process in the nineteen months?
A. I would have to figure.
Q. Please do it.
A. There was in the neighborhood of 72,000 barrels.
1564 Q. In nineteen months, and your capacity is 300 barrels a day? A. Yes, sir.
Q. And you are running to capacity? That would be about capacity, would it not? A. I do not think so.
Q. How many barrels of clear flour bleached, and how many of patent? Do you run Sundays?
A. We did, a week ago Sunday.
Q. Well, I mean generally? A. No, sir.
Q. How many days, about, do you run?
A. I usually figure it by the hour. About, I should say, an average of 385 hours a month.
Q. How many hours in a month?
A. Well, usually a working month is about 600.
Q. And how many barrels an hour? A. I figure 10.
Q. That would be 30,500? A. How is that?
Q. How many did you say, altogether? How many barrels of flour did you say? A. About 72,000.
Q. How many of that is clear?
A. Well, I cannot say. Sometimes we do not run any clear.
Q. How many barrels of clear flour have you bleached in 1901, about? A. I am not in position to say.
Q. Well, give us the best you can. You cannot tell us how many were bleached, unless you can tell us how many of each kind were bleached, can you? I want to find out how much

gas went through these pipes, just figuring the average number of hours each month run, making so many average barrels per hour, which would strike the average.

Q. How much clear was bleached?

A. I do not know; I do not know the runs. I am not in position to say.

Q. How much patent was bleached?

A. Well, some of the patent, and the clear, would be all the flour that was bleached.

1565 Q. How many barrels of the total output were bleached? A. 72,000 barrels.

Q. So you bleach all you make?

A. All but the low grades.

Q. Well, I know, but was that sold as flour?

A. All we made.

Q. Was the low grade sold as flour, commercially?

A. Sold on sample, low grade flour.

Q. Now, I want to find out how many barrels of patent you bleached, and how many barrels of clear you bleached. You had one pipe into the clear agitator, and one into the patent agitator? A. I cannot tell you.

Q. Can you give us any idea?

A. Well, the most part is on 95 per cent flour.

Q. That is, 95 per cent patent?

A. We do not call it patent. We call it 95 per cent.

Q. Do you brand it patent? A. No, sir.

Q. What is made in this patent agitator, then?

A. Well, that is what we call the best flour.

Q. That is the 95 per cent?

A. Well, if we run it 95, we don't run but one kind of flour at a time, you know. If we run 95 per cent, we do not run our best patent.

Q. Well, when you run 95 per cent?

A. Then there is only one agitator used.

Q. You put it all in one agitator?

A. Yes, sir. When we are running the best flour, the best flour goes through a large agitator.

Q. What per cent? A. It ranges from 75 to 85 per cent.

Q. How much clear? What is the percentage of your clear, then, that is bleached?

A. Well, if we run 75 per cent, that would be 20 per cent of clear, taking off five per cent of low grade.

Q. So then, you bleach, when you organize that way, 95 per cent of the total flour content of your wheat? A. Yes, sir.

Q. Do you advertise it as bleached? A. No. sir.

1566 Q. The demand from your customers has not been such as to require you to advertise it to be bleached, yet?

A. No, sir.

Q. You told us the demand from your customers require it to be bleached, though?

A. The demand from our customers demands a flour that will make white bread.

Q. If I took a knife and cut off a slice from each one of these loaves of bread that you have brought here, could you say which was made of bleached or unbleached flour, do you think if I did not let you see the exhibit number, could you say which was which?

A. I might not, here in the light, because it is dark, but you put it on a plate—

Q. Well, that is all right. But, with such light as we are working with in the court room, and we are working without artificial light at this moment, you are unwilling to swear that you can tell which bread was made from the bleached and unbleached? A. I will take the chance.

Q. Well, will you swear— do you think you can do it?

A. Yes.

Q. You think you can do it? A. Yes.

Q. Well, now, without cutting it off, can you do it?

A. Yes. This is the unbleached (indicating).

Q. Now, look at it and tell us which mark is on the unbleached. A. 243.

Q. Did you look at that before you answered?

A. No, sir; change them around again.

Q. Oh, no; if you say you did not. I think I can tell. Now, then, it is because of that very slight difference in color, and because of that only, that you bleach flour by the Alsop process, in your mill?

Mr. Helm: That is not what he said, Mr. Butler.

Mr. Butler: Well, I am asking if that isn't the fact.

A. That is one of the reasons why we bleach it.

1567 By Mr. Butler:

Q. That is only one of the reasons, isn't it?

A. That is one of two reasons.

Q. That is one of two reasons? A. Yes.

Q. Now, if that was the only reason, and you thought it added a poisonous substance—a very minute poisonous substance, not enough to kill me, but enough to give off an odor, but still poisonous if taken in sufficient quantities, do you think that that would justify bleaching?

Mr. Scarritt: I object to that as an argument, if your Honor please.

Mr. Butler: Well, maybe it is.

The Court: Objection sustained.

By Mr. Butler:

Q. Does bleaching make flour lighter in color?

A. Whiter, yes, sir.

Q. Is a short patent lighter than a long patent?

A. Well, now, I cannot say.

Q. You are not miller enough for that? A. No.

Q. Is a new flour darker than an aged flour—naturally aged, both unbleached?

A. Yes, sir. The new flour darker?

Q. Yes. A. More yellow.

Q. Yes, darker in color? A. Yellow.

Q. You mean less white? A. Yes, less white.

Q. So that, if you bleach the new flour, you make it look like the aged flour, don't you?

A. I do not know what aged flour looks like.

Q. You never [say] any? A. No, sir.

Q. Well, you have told me it was whiter in color than the fresh flour.

A. Well, I was just going on what I hear.

Q. You do not know about that?

1568 A. I am not experienced in the mill; I do not know.

Q. So, you are not qualified, you feel, then, to go into the technicality?

A. Certainly not into the technical part.

Q. Have you never been in the milling business until this nineteen months? A. No, sir.

Q. What was your business before that?

A. Grain business.

Q. Selling to mills?

A. Well, I was not the seller; I was simply a minor employee.

Q. Are you interested financially in this mill?

A. Yes, sir.

Q. Are you interested financially, or your company, in any way, with the Alsop people? A. No, sir.

Q. So your activities in bringing this flour all the way from Lincoln, and employing a chemist to bake it, and taking the parts of your mill here, was simply from your interest in the matter, as a mill bleacher? A. Yes, sir.

Q. You never made any investigations or inquiries as to what effect this bleaching had? You are not up on that, I understand? A. No, sir.

Q. Did the bleaching company guarantee protection to you against the order of the United States Government, prohibiting bleaching by nitrogen peroxide gas?

A. No, sir. We got it before this issue came up.

Q. You bought it before nineteen months ago?

A. We bought our bleacher in August, 1908.

Q. Who installed it?
A. Why, our millwright foreman that we had installing the machinery in the mill.
Q. Who furnished the stuff? A. The machinery?
Q. Yes. A. Alsop.
Q. Piping?
A. No, sir. We bought it of a local plumber, there.
Q. Was your millwright an experienced bleacher, before this?
A. Well, he knew enough to set up the machinery.
1569 Q. I am trying to find out why it was galvanized pipes, instead of ordinary iron pipes that were selected. You do not know anything about that? A. No, sir.
Q. When were those pieces that you have just handed to the jurymen, [but] off of Exhibit 243 and 244.
A. This morning, I think.
Q. Who cut them off? A. Mr. Esterbrook.
Q. And gave them to you? A. Yes, sir.
Q. You brought them here? A. No, sir.
Q. Who brought them here?
A. Mr. Larabee. I saw them yesterday.
Q. Where does Mr. Larabee live?
A. I do not know.

Mr. Scarritt: He is here.

Witness excused.

Alva Edgecomb, called as a witness on behalf of claimants, being first duly sworn, testified as follows:—

Direct Examination

By Mr. Elliott:
Q. State your full name.
A. Alva Edgecomb.
Q. Where do you live, Mr. Edgecomb? A. Omaha.
Q. What is your business? A. Milling.
Q. In what capacity are you now engaged in business?
A. Manager and Secretary of the Updike Milling Company.
Q. And where is that company located? A. Omaha.
Q. Are you a practical miller? A. Yes, sir.
Q. How long have you been engaged in milling?
A. 30 years.
1570 Q. What is the capacity of the mill of the Updike Milling Company? A. 500 barrels.
Q. A day? A. Yes, sir.
Q. 500 barrels per day. Does [you] mill use an Alsop bleacher? A. Yes, sir.
Q. How long have you been using it?
A. It will be three years in October.

Q. Have you, yourself, had experience with that Alsop bleacher? A. Yes, sir.

Q. Have you had experience with it in any other mills than the Updike Milling Company?

A. At two other points.

Q. State what others, and how long.

A. We had about two years, at Missouri Valley, Iowa, and about six months at Logan, Iowa, and the rest at Missouri Valley.

The Court: You mean the rest in Omaha?

A. Yes, sir.

The Court: You said Missouri Valley.

By Mr. Elliott:

Q. Now, I will ask you to tell us what, in your judgment, is the effect on flour of bleaching it.

A. It whitens it in color, and ages the flour.

Q. And what? A. Ages the flour.

Q. Now, tell us what you mean by "ages the flour".

A. I mean that, before the use of the Alsop bleacher, we always carried large stocks of flour in the storehouse—

Mr. Butler: I object to that as not responsive to the question and move to strike it out.

The Court: That is not responsive, and is stricken out.

Mr. Butler: We do not need to talk about Alsop bleachers, telling what aging is.

By Mr. Elliott:

Q. What do you mean by aging flour?

A. I mean that flour is better by having some age
1571 on it, between the time of milling and the time it is baked.

Q. Now, suppose you bleach flour from new wheat, how does that flour compare with the same flour, if you should let it age, for 30 to 60 or 90 days?

Mr. Butler: Just a moment. It seems to me that is drawing a false issue. It is not new wheat flour.

Mr. Elliott: Why, you have put witness after witness on to tell about that.

The Court: He may answer it.

A. The new wheat flour, bleached, is, to all appearances, and to all practical purposes, aged at least 60 days.

Q. I will ask you to answer that, in terms of quality. Do you mean by that that it possesses the characteristics of flour that has been aged that long, or what?

A. I mean that it possesses all the qualities of aged flour.

Q. Now, how do you know that? Tell us how you know that?

A. I know it from experience, and from the fact that we are able to hold our trade with flour, particularly from--

Mr. Butler: (Interrupting) I move to strike out his holding his trade.

The Court: That is stricken out.

By Mr. Elliott:

Q. Now, you can answer my question. I asked you, how do you know that this flour possesses the characteristics of naturally aged flour? Upon what do you base that opinion?

A. Do I understand that my answer was stricken out?

Mr. Scarritt: Only part of it.

Mr. Butler: That part relating to his trade was stricken out.

By Mr. Elliott:

Q. Is there anything in your experience that will enable you to tell us how you know that?

1572 A. By the baker's test.

Q. Now tell us how that is.

A. We keep continually someone in our employ, who is baking our flour, at least twice a week. And on the baking test, we rely largely for results.

Q. I will ask you if you have ever had experience in delivering, or giving bleached flour and unbleached flour to bakers? A. Yes, sir.

Q. And if there has been any difference in the way that flour has been received by any bakers, you can tell what it is.

Mr. Butler: Wait a moment. I have understood it to be indicated that we could not go into what the customers said.

The Court: One of the issues in this case is, not whether the customers are satisfied, so much, because it is charged that customers are satisfied by fraudulent methods, to-wit, in the language of the statute: "If it be mixed, colored, stained, and so forth, in a manner whereby damage or inferiority is concealed", is one of the things charged, and, secondly, where a poisonous ingredient has been inserted; so that the customer, the bread eater—not the bread seller, may be deceived; inferiority may be concealed. That is one of the very issues. A man might hold his trade, and his bakers be absolutely

satisfied, but it would be in contravention of the Pure Food Law, if they are satisfied, because they have been deceived, and inferiority is concealed, just as I may get a coat, supposing it to be a Scotch import, and be perfectly satisfied with it, but, upon analysis or investigation, it might be American shoddy. So, how can you make that the test, Mr. Elliott? I have been satisfied with the bread I was eating, if I knew nothing about the bleached flour process. The inferiority may have been concealed from the ordinary housewife or servant, or purchaser for the family. They may be perfectly
1573 satisfied, but, if inferiority is concealed, or the poison injected, is it not in violation of the Pure Food Law, precisely as my ham that I buy may be loaded with preservatives, or maple sugar that I buy may smell and taste to me like maple sugar, but an analysis may show that it is made out of brown sugar, and yet, the purchaser in the one case is entirely satisfied. So, how are you going to get at it in that way?

Mr. Butler: Let me suggest the further point that it is merest conclusion and hearsay.

The Court: I was simply saying, now, that in my judgment, it is not the test, to show by the miller, or by the baker that, because—

Mr. Scarritt: (Interrupting) If your Honor please, we certainly must be permitted to object and except to the statements made by the Court at this time.

The Court: You may take exception, but nevertheless, I will make my statement, just as I understand the law that, if it comes within either of these provisions of this statute, then this is contraband. Otherwise, it is not. I mean the two issues that I am now dealing with. There are two other issues. "If it be mixed, colored, powdered, coated, or stained, in any manner whereby damage or inferiority is concealed", then it is contraband, and in violation of the Pure Food Law, under which this trial is progressing.

Mr. Scarritt: Now, let me suggest on that—

The Court: All right. Now, you go on and talk, Judge, and then I will go on.

Mr. Scarritt: I do not want to talk. I just want to suggest that this is one of the ways that your Honor has suggested, two or three times in this trial, that it goes to the question of the weight of the testimony, and not the
1574 admissibility of it, because it is one of the ways to determine whether there is inferiority there. People do not generally accept and take inferior things, without mak-

ing some protest or kick, and this goes to that extent, to show that it is not inferior, that there is nothing concealed, that the superiority of the product is revealed, and not concealed. If everybody is satisfied with a certain thing, and so express themselves, either en masse, or as individuals, why that is testimony going to show that that article, or whatever it is, that meets the public approval, is a superior article, and not an inferior article.

Mr. Butler: The point is this: If the baker is satisfied with it, let us have him here, and we will ask him. If the housewife is satisfied, bring her here, and we will ask her. But, to have a man who is a miller testify by mere hearsay that it does so-and-so, does not appear to me to prove anything.

Mr. Scarritt: Is not the chain complete? The miller affords to the dealer what the dealer necessarily requires for the public consumption.

Mr. Butler: No miller can testify that I am satisfied or dissatisfied as to the flour, without hearsay.

Mr. Scarritt: Yes, he can. It is a matter of notoriety.

Mr. Butler: The miller might want to cheat the person who buys the loaf of bread, and he may want the bleached flour, and still [pray] for it.

The Court: Just a moment, gentlemen. Here is what I am trying to get at: I have not expressed any views in this case, and do not intend to, as yet, at least, as to what the evidence tends to show: I mention that, in answer to the criticism of Judge Scarritt, but sometime, sooner or
1575 later, you have got to get to the issues here, as presented by the statute, two of which issues are: "If it", in this case meaning flour, "be mixed, colored, powdered, coated, or stained, in a manner whereby damage or inferiority is concealed"; if the verdict is solely under that, one result follows. Another issue that will be submitted to the jury later on, is: "If it",—meaning flour—"containing any added poisonous or other added deleterious ingredient which may render such article injurious to health." Now, then, take it under the first one, particularly. Let me illustrate. I may buy or order at the cigar store a Havanna cigar, sold to me as a Havanna cigar. I may think it is the finest cigar I have ever got in my life, but it turns out that it was native growth tobacco, one inferior to the other.

Mr. Scarritt: Not necessarily.

The Court: Now, Judge, I would like a good deal if I could talk once without interruption.

Mr. Scarritt: All right; I beg your pardon, your Honor.

The Court: I may be satisfied in any supposed case—I don't care what you take—I may be satisfied, and yet if the inferiority has been concealed, then it is a fraud, and much like all frauds, the fraud is concealed, otherwise the man would not purchase it. The horse with the heaves or other disorder, is concealed from me; I buy him, would not buy him, but for the concealment of the fraud. Now, the point I am getting at here, is it for the miller to say that the trade is satisfied? That is what I am getting at. The trade may be or may not be satisfied by the very concealment of the inferiority. I am not saying it is inferior. Later on that will be submitted to the jury, whether new wheat flour, concealed as old flour, sweated in the sack, sweated in the bin, gone through
1576 the natural processes, if that is inferior, if that inferiority is concealed by the process, then, is it not in violation of this statute?

Mr. Scarritt: We must object and except in the same way, your Honor.

The Court: Sir?

Mr. Scarritt: I say, we must object and except, as we did before, to the remarks of the Court at this time.

The Court: Which particular remark?

Mr. Scarritt: The remarks with reference to—

The Court: (Interrupting) My reading the statute?

Mr. Scarritt: Reading the statute, and making the argument on this proposition.

The Court: Very well. I repeat, I have not expressed my views about the evidence in this case.

Mr. Scarritt: In this view, your Honor. Your Honor has said we must all keep our minds free from any conclusion, until we get through.

The Court: Yes, sir.

Mr. Scarritt: I think it is perfectly right.

The Court: Yes, sir. I have not expressed it, but I am trying to get back, because, sooner or later, this case is going to be submitted to the jury under the provisions of the statute, to which I will draw specific attention. If inferiority is concealed by the bleaching process, then what follows? If a poisonous gas—if it is poisonous—was injected in this flour, and the flour is made white, then, if that is harmful, and so forth, in

the language of the statute, then what? Now, I see you gentlemen are all anxious to make a speech and I am not anxious to hear you this evening. Court is adjourned until tomorrow morning.

(Thereupon Court was adjourned until ten o'clock a. m. Wednesday, June 22nd, 1910.)

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Pursuant to adjournment, Court met at ten o'clock a. m., Wednesday, June 22, 1910, and proceeded with the trial of said cause further as follows:

The Court: When we adjourned last evening, we were talking about certain matters. I do not know whether there was anything further counsel desired to say about that, or not. If there is, I will hear you, briefly.

Mr. Elliott: If your Honor please, I do not want to weary you with this talk, but I merely want to make this observation, because I think my question was not understood. As I understand it, Mr. Butler has been endeavoring to show that, if a new flour is bleached—that is, flour from new wheat we will say, is bleached, and whitened in color, and, if it possesses, notwithstanding the bleaching, all the properties of a new flour, and is unworkable, a person might buy that flour, thinking it was a naturally aged flour, and it had the properties of a natural aged flour, and be deceived. Well now let us pass that for a minute. Now, I have been endeavoring to show by this witness that, in his judgment, flour from a new wheat that is bleached, not only is lightened in color, but that its quality is improved, and that it is aged and conditioned. That is what he testified. Now, it seems to me it is germane to that, to show the difference in the way flour has been received by his customers, whether it was bleached or unbleached.

The Court: Who do you mean by customers?

Mr. Elliott: The man he has sold it to—the baker, for instance. If he has sold them flour, bleached and unbleached, has there been any difference in the way they have been received, and if so, what? That is what I have been trying to bring out.

Mr. Butler: The last question is: "If there has been any difference in the way that flour has been received, by any baker, you can state what it is". Now, maybe the baker
1578 paid less for it than he would have paid if it had been naturally aged flour. Maybe it is a matter of adjustment, commercial considerations, and in any event, it is purely hearsay for him to testify as to the states of mind of a baker,

as to this. Let the bakers tell how this flour does. Let them say what kind of bread it makes. It is not for a miller to get off, in sweeping remarks, that it gives satisfaction to bakers, or somebody else. Let somebody else who has used it, who knows, say and some one we can cross-examine. It won't do to bring witnesses here, who do not know anything and let him give their conclusions, that we cannot cross-examine--matters of hearsay. That might do in a town meeting, but it won't do to try a law suit that way.

The Court: Now, let me say a few things. No one doubts the importance of these matters, and I am not speaking only of the present question. So far as that one question is concerned, it may or may not be pivotal, but, on the 30 day of June, 1906, four years ago, congress, with the approval of President Roosevelt, carried this measure forward into a statute known as the Pure Food and Drugs Act. That is the statute under which we are proceeding and under which this trial is being conducted. That congress had the authority and power to so enact, I have already adjudicated in another forum, in part, the same parties, perhaps, and, in part, independent parties, but I have an abiding conviction on that question, as expressed in my opinion. I am not speaking as to the reasons for my opinion, but the conclusions. I could better that opinion, I think, if I had the time in which to do it, but I have seen no reason whatever to modify my conclusions as to an interstate shipment like this, from Lexington, Nebraska, to Castle, or Greencastle, or whatever it may be, in Missouri, being an interstate shipment, gives this court jurisdiction to hear and determine the question as to the particular flour now under seizure. This pure food statute seems to me is for the benefit of the consumer, in this case the bread eater, which comprises the entire human family. This statute is not for the
1579 benefit of the baker, or the middleman, nor for the miller, nor for the wheat grower. It is for you, and it is for me, and every one else who eats bread, and probably we all do, three times a day, and, quite likely, that is true of the entire human family. Now, this statute is divided into three grand divisions. One is with reference to drugs and medicines, in which a distinct, specific test is made. With that, we are not now dealing. The second division is with reference to confectionery eaten, perhaps, by all children and quite a percentage of adults. That fixes a specific test in not what the confectionary shall contain, but what the confectionery shall not contain. The third and last division, being the one under which we are now proceeding, is with reference to food stuffs, including flour made up into bread, pastry, and so on. Most obviously there could be no specific test made with reference

to foods, and the more one thinks about that, the more strongly it grows on him, and it necessarily follows that congress was compelled to use some general terms in the statute. One is with reference to misbranding. To that, for the present, I shall not allude. But this statute refers in this way, aside from the interstate shipment proposition, which is a question of law "That, for the purpose of this [set], an article shall be deemed to be adulterated", passing by drugs and confectionery, "in the case of food, first if any substance has been mixed and packed with it, so as to reduce or lower, or injuriously affect its quality or strength." The pleadings under that clause, present an issue that is now being tried. Passing by the second and third, as not being germane to any inquiry here, the fourth "If it be mixed"—it meaning flour—"colored, powdered, coated, or"—disjunctive "or"—"stained, in a manner whereby damage or inferiority is concealed." Now, under that, these pleadings present a distinct issue. Fifth "If it" meaning flour, in this case—"Contain any added poisonous, or other added deleterious ingredient, which may render
1580 such article injurious to health." Now, there are the four issues we are trying. First, with reference to misbranding, that I have passed to one side for the time being. Here are the other three.

Mr. Scarritt: Is Your Honor charging the jury, now?

The Court: No, sir. I am giving my reasons, being an explanation of my ruling. Why that question, Judge, I do not understand.

Mr. Scarritt: Well, it seems to me it does not appertain to the ruling, as to whether these bakers shall testify as to what effect this flour has. They are part of the community. You cannot exclude them as a part of the community. They are consumers, as well as purchasers.

The Court: My belief is, this statute is for the benefit and protection of consumers.

Mr. Scarritt: I agree with you, and they are consumers. We are all consumers, but it seems to me it is unnecessary at this time, if Your Honor please, with all due regard and respect for Your Honor, I have, to go over the whole ground of this pure food law. That is what occurs to me. It is anticipating the charge to the jury. I say that, because I think that it is my duty to say it in the interest of my clients.

The Court: I was trying to analyze the issues, and what leads up to it.

Mr. Scarritt: I understand, Your Honor.

The Court: Now, there are two theories here with reference to the poison. One, by the government, and one by the defendant, concerning which I now have nothing to say, but will, later on, in my charge to the jury. But the question now before the court goes to clause four, which I repeat "If it"—meaning flour in this case—"be mixed, colored, powdered, coated, or stained, in a manner whereby damage or inferiority is concealed." Concealed from whom? That is the ultimate question that I am to charge this jury concerning. Now, any evidence on
1581 the part of the government that tended to show that inferiority of flour is concealed by the bleaching process, was admissible. Any evidence tending to show that inferiority of flour is not concealed by the bleaching process, is legitimate evidence for the claimants to offer. Now, I am not saying but what you can take it, step by step, and show that the baker is not deceived, or that the inferiority, if there is an inferiority—and that is a question of fact for the jury—I am not saying but that you can show by the baker that the inferiority, if any, is not concealed from him, the baker. The question is, is that enough? I am not now saying. I will cover that in my final charge to the jury. I am not charging the jury here, at all, yet. I am giving the reasons for the analysis I have made in my own mind, of this statute. Therefore, I think you can take, and, step at a time, show that, if there is any inferiority, that such inferiority is not concealed from the baker, but the question remains, will that be enough? I shall wait for further arguments on that. But I have no doubt in my own mind, at this time, subject to any change of opinion, about it, that this statute is for the benefit of the consumer. Therefore, I will allow this question to be answered.

Mr. Scarritt: If Your Honor please, we desire to except to the remarks of the court in making the ruling on this question, and save our exceptions.

The Court: Very well.

The witness Edgecomb thereupon resumed the stand and the direct examination by Mr. Elliott was continued as follows:

Q. I will ask you this question. Suppose you bleach flour from new wheat, how does that flour compare with the same flour, if you should naturally age it?

Mr. Butler: That was not the question pending.

Mr. Elliott: Oh, no.

1582 Mr. Butler: Have you withdrawn the question pending?

Mr. Elliott: Not at all.

Q. Then, I asked you if you had had any experience in delivering or selling unbleached flour and bleached flour to bakers, and you said you had.

Mr. Butler: What is this recital for? To help the witness?

Mr. Elliott: No, I just wanted to get the matter clear.

Q. Then, I asked you, if there has been any difference in the way that such flour has been received by any bakers, you can state what it is.
A. I do not know as I exactly understand the question.
Q. In your experience as a miller, have you sold bleached and unbleached flours to bakers? A. Yes, sir.
Q. Now, has there been any difference in the way such flours have been received by the bakers? A. Yes, sir.
Q. Now, you may state what that is.
A. The bakers want the bleached flour.

Mr. Butler: I move to strike that out as giving his conclusion, and hearsay.

The Court: Well, it may stand.

By Mr. Elliott:
Q. On what do you found that statement?
A. In their purchases, they specify that they want the flour bleached.
Q. I will ask you what benefits, Mr. Edgecomb, do you derive—I do not mean financially,—what benefits do you derive from bleaching that flour, as to improving it or otherwise?

Mr. Butler: Objected to as irrelevant and immaterial.

The Court: You may answer.

Mr. Butler: We except.

A. We get a good deal better color by bleaching, and we age it by bleaching.

By Mr. Elliott:
Q. Can you conceal the impurities in flour, if there be
1583 any in it? Can you conceal the impurities in flour by bleaching it? A. No, sir.
Q. Suppose a miller should bleach a flour containing impurities, and add such flour to his high grade flour. What effect would that have on the latter?
A. It would lower the grade.
Q. Now, in your judgment, could a miller profit by such a proceeding?

Mr. Butler: Objected to as immaterial. Are we going to try the economics and all the arts of the craft? If you cannot make profits by it, does that make adulterations, and if you can make profits, does that change the effect?

Mr. Elliott: I withdraw it.

The Court: The question is withdrawn.

By Mr. Elliott:

Q. Mr. Edgecomb, I will ask you if you have ever noticed any foreign or unnatural odor in flour that has been bleached by the Alsop process. A. No, sir.

Q. Have you ever compared bread made from bleached and unbleached flour, to ascertain if there was any difference in the odor, and taste, or flavor? A. Yes, sir.

Q. What is your opinion in that respect?

A. I don't detect any difference.

By Mr. Butler:

Q. What? A. I don't detect any difference.

By Mr. Elliott:

Q. Any difference in the smell or the taste? A. No, sir.

Q. Have you ever had any dough balls in your mill, Mr. Edgecomb? A. No, sir.

The Court: I suppose you mean in the flour?

Mr. Elliott: In the process of manufacturing flour, I mean.

Q. Have you ever had any dough balls in any of the apparatus? A. No, sir.

1584 Q. Do you use bleached flour in your own family, Mr. Edgecomb? A. Yes, sir.

Q. I will ask you over what period of time you have been using bleached flour in your family.

A. Between five and six years.

Q. During that time, I will ask you if there has been any sickness in your family from eating such bread.

Mr. Butler: Objected to as calling for his conclusion, immaterial. He has not shown himself a diagnostician.

The Court: Caused by eating this bread?

Mr. Butler: (continuing) Or pharmacologist.

Mr. Scarritt: That is what he said. If he knows.

The Court: He may answer.

Mr. Elliott: If he knows.

A. No, sir.

Cross-Examination

By Mr. Butler:

Q. Well, have they had some sickness, from anything else, Mr. Edgecomb, during that period?

Mr. Elliott: I beg your pardon. I wanted to introduce some samples with this witness, which I forgot.

Redirect Examination

By Mr. Elliott:

Q. Have you some samples of bread with you, Mr. Edgecomb? A. Yes, sir. (Witness produces the samples.)

The samples produced by the witness were here marked by the reporter "Claimants' Exhibit 247" and "248".

By Mr. Elliott:

Q. I hand you two loaves of bread, marked "Claimants' Exhibit 247" and "248", and ask you to state from what flours these loaves were made, and by whom.

A. They were made by the Updike Milling Company.

Q. That is, the flour? A. The flour.

Q. Did you bring the flour here? A. Yes, sir.

Q. To whom did you give it? A. To Mr. Ballinger.

Q. You mean Br. Billings? A. Billings.

1585 Q. What instructions, if any, did you give Mr. Billings?

A. I instructed him to bake them separately.

Mr. Butler: Well, I will object to his instructions to Billings, as immaterial.

The Court: That may stand until we see what will come of it.

Mr. Elliott: Now, Your Honor, expecting to introduce Mr. Billings, to prove how he baked these loaves, I would like to introduce them.

Mr. Butler: Is there any need of introducing them until Mr. Billings can testify?

Mr. Elliott: No special need.

Mr. Butler: Then, just lay them aside.

The Court: Of course, Mr. Elliott's word is good.

Mr. Butler: Oh, yes.

Mr. Elliott: Well, I cannot have Mr. Billings baking bread and in court at the same time.

The Court: Go on. You say you will supply the necessary proof?

Mr. Elliott: I will.

The Court: That is sufficient for me.

By Mr. Elliott:

Q. Now, will you kindly cut those loaves in half? But, before you cut those, which is 247?

A. Well, I would not know.

By Mr. Butler:

Q. You cannot tell which is which, without cutting the loaf? Is that it, Mr. Edgecomb?

A. I would not know which was which, from the outside.

By Mr. Elliott:

Q. Now, cut them open, Mr. Edgecomb.

(Witness does as requested.)

Q. Now, I hand you these loaves, marked "247" and
1586 "248", and ask you to state what they are.

A. One of them is a bleached, eighty per cent, and the other is an unbleached, eighty per cent.

By Mr. Lyons:

Q. Which is which? 248 is which, and 247 is which?

A. I do not know.

By the Court:

Q. Well, look at the exhibit marks, and say which 247 is and which 248 is. A. This is 247 and this is 248.

By the Court:

Q. Which is the bleached? A. I do not know.

By the Court:

Q. Which is the unbleached? A. I do not know.

The Court: Well, he says he doesn't know. Anything further?

By Mr. Elliott:

Q. How old was the flour from which the unbleached bread was made?

A. It is between five and six months.

By the Court:

Q. How old, the bleached flour?

A. The bleached flour was made last Friday.

By the Court:

Q. The baking was done yesterday, or this morning, which?

A. I do not know.

Mr. Elliott: I introduce these exhibits.

Cross-Examination.

By Mr. Butler:

Q. I want to know first, as to your family. How large is your family, Mr. Edgecomb?

A. Three sons at home.

Q. And their ages?

A. Twenty, twenty-four and twenty-six.

Q. Occupations?

A. One of them is a mechanical engineer, the other is a civil engineer, and the other is an [electric] engineer.

1587 Q. Yourself, and Mrs. Edgecomb, I suppose.

A. I am a miller.

Q. That is your whole family?

A. That is the whole family, except the wife.

Q. Have any of you been sick in the last five or six years?

A. Yes, sir.

Q. Which one?

A. The wife has been sick.

Q. Any one else in the family?

A. Not barring bad colds, or something like that.

Q. Congestions about the throat? A. No.

Q. The lungs? A. No.

Q. Well, how did this cold manifest itself?

A. Just a bad cold.

Q. Well, how did that manifest itself? When I get a bad cold, my throat and lungs congest, and I cannot breathe as freely and my throat gets sore, and my nose inflamed. Now, did it manifest itself that way with the gentlemen members of your family, who had colds?

A. No throat trouble.

Q. Any lung trouble? A. No, sir.

Q. Any head trouble?

A. Some head trouble, yes.

Q. Do you know the effect of nitric acid fumes upon that sort of thing? A. No, sir.

Q. Did you ever have any colds, yourself?

A. Yes, sir.

Q. Quite frequently? A. No, sir.

Q. Just occasionally? A. Yes, sir.

Q. Did you ever have any doctor, at all, during that time?

A. No, sir.

Q. So, then, do you, by this testimony that your family has eaten the flour that you, yourself, have made for five or six years, and because the civil engineer, the electrical engineer, and the other engineer and yourself have not been sick, that, therefore, the flour must be improved and made beneficial to health? Is that your reason?

Mr. Scarritt: We object to that as not based upon testimony at all.

Mr. Butler: Well, what was his testimony put in here for?

The Court: He may answer.

1588 Mr. Scarritt: To show they had been eating this flour for five years and nobody had died.

By Mr. Butler.

Q. Because you haven't been poisoned to death, or because you haven't been able to diagnose sickness to these engineers, who are your sons—is that the reason you bleach, and say it improves flour? A. No, sir.

Q. Is that the reason you say that it is good to put poisonous gas described by your chemist as N2O3, into flour?

A. I do not say that, sir.

Q. Did you know this gas was poisonous?

A. No, sir.

Q. Did you hear your chemist testify yesterday that N2O3 was poisonous? A. Yes, sir.

Q. You never knew that before, did you?

Mr. Scarritt: I object to the reference to "his chemist" if your Honor please, and this line of examination,—nothing but a bull-dozing process.

The Court: It is not his chemist.

By Mr. Butler:

Q. Is the Updike Company interested in the mill that manufactured this flour that was seized?

A. This flour that was seized?

Q. Yes. A. No, sir.

Q. Is the Updike Milling Company financing this law suit?

A. No, sir.

Q. In whole, or in part?

A. Not to my knowledge.

Q. Well, would you have knowledge?

A. I think I would.

Q. What is your business connection with that company?

A. I am the manager.

Q. Do you say that the Updike Milling Company is not paying part of the expenses of this law suit?

A. Not to my knowledge.

Q. Well, would you say that you do know, and that it is not the fact?

Mr. Scarritt: He says not to his knowledge, if Your Honor please.

1589 Mr. Butler: Well, I know, but maybe he does not know what they are spending their money for.

The Court: He may answer.

By Mr. Butler:

Q. Now, will you swear that Ed P. Smith is not being paid, in whole or in part, by the Updike Milling Company, for defending this law suit? We will see whether it is his chemist or not.

The Court: Answer the question.

Mr. Scarritt: He says he does not know, and it is an unfair and improper question to ask him, when he says he does not know.

The Court: He may answer.

Mr. Scarritt: And we except to the ruling.

The Court: Answer the question, please.

A. I don't know that he is.

By Mr. Butler:

Q. Do you know that he is not, and will make your solemn oath that he is not, without any qualification?

A. No, sir. I do not know that he is not.

Q. Did you employ Ed P. Smith? A. No, sir.

Q. Wait a moment. (continuing) To bring a law suit, or suit in equity, in the courts of Iowa? A. No, sir.

Q. For the Updike Milling Company, to enjoin the marshal and district attorney of Iowa, from stopping the Alsop bleaching? A. I do not.

Q. Did the Updike Milling Company?

A. The Updike Milling Company has a president.

The Court: He did not ask you that. He asked you if you hired a lawyer.

The Witness: I wanted to define my position.

By Mr. Butler:

Q. Did you know that?

A. Will you repeat the question, please.

1590 Q. Did the Updike Milling Company hire Ed P. Smith, the lawyer who was defending this law suit, to bring a suit in equity in the United States Court, in the Southern District of Iowa, for the purpose of having adjudged the pure food law of this country unconstitutional, and an invasion of the rights of citizens?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

The Court: He may answer.

A. I don't know.

By Mr. Butler:

Q. Well, you do not know much about this Alsop litigation, do you? Don't you know that this suit was argued before this judge, by these lawyers and Ed P. Smith and myself?

A. Yes, sir.

Q. And the law held constitutional?

Mr. Scarritt: We object to that as incompetent and immaterial.

The Court: He may answer.

Mr. Scarritt: We except to the ruling of the court.

By Mr. Butler:

Q. Don't you know that? A. Yes, sir.

Q. Don't know who your lawyer was? A. Yes, sir.

Q. Wasn't it Ed P. Smith? A. Yes, sir.

Q. Didn't you hire him to do it? A. No, sir.

Q. Who did? A. I don't know.

Q. Oh. So, the Updike Milling Company loaned its name for general attack upon the constitutionality of the pure food law, to somebody else, who hired lawyers? Is that it?

Mr. Scarritt: We object to that as immaterial.

The Court: The holding of the court is, anything showing prejudice or interest is allowable on cross-examination, and for that reason, I think these questions are proper.

Mr. Scarritt: We save an exception to the ruling of the court.

1591 A. Will you repeat the question?

(Last question read by the reporter)

A. Not to my knowledge.

Q. How do you explain that the Updike Milling Company brought this suit to have this law adjudged unconstitutional, and had these lawyers arguing it for them, unless they hired the lawyers?

Mr. Scarritt: We object to that as purely argumentative, if Your Honor please, incompetent, irrelevant and immaterial.

The Court: You may answer.

A. What the president of our company might have done, in that line, I don't know. That is the reason. That is the explanation.

By Mr. Butler:

Q. So, the president of the company—Mr. Updike, I believe? A. Yes, sir.

Q. May be hiring these lawyers, here, to defend the practices of Mr. Leflange, up in Lexington, Nebraska, in making the flours? A. Possibly.

Q. So, for that reason, you say that the Updike Milling Company is disinterested here. Is that it? A. In this case.

Mr. Helm: He has not said that.

By Mr. Butler:

Q. Well, you do say that the Updike Milling Company is not interested in this case? A. Not to my knowledge.

Q. And that you are not? A. No, sir.

Q. And you come here as a non-partisan, without any feeling on one side or the other, do you? A. No, sir.

Q. You come here as a partisan, with feeling against the government, and for bleaching, don't you? A. No, sir.

Q. Do you come here as a non-partisan, with no feeling on the subject? A. No, sir.

Q. Then you come here as a partisan with feeling on the subject? A. Not necessarily.

Q. Well, now, how is that? How can that be?

1592 The Court: Oh, I think we have gone far enough.

By Mr. Butler:

Q. Did you attend the millers' meeting here yesterday?

A. No, sir.

Q. You did not take part [it] it? A. No, sir.

Q. Is color an impurity in flour, the natural color associated with the oil content of the flour? A. I think not.

Q. Why not? Never heard that it was did you?

A. No, sir.

Q. Never heard that natural color, in the interior of the wheat kernel, was an impurity, did you? A. No, sir.

Q. So, then, bleaching that out cannot be purifying it, can it? A. I don't know.

Q. Well, purifying is removing impurities, isn't it?

A. I understand it so.

Q. If the color is not an impurity, the destruction of the color cannot be purifying it, can it?

A. I would not think so.

Q. No. Neither would I. Does this gas that you bleach your flour with give off an odor? A. Yes, sir.

Q. At the agitator? A. Yes, sir.

Q. In the flour bin? A. Yes, sir.

Q. Same in the flour bin, as it is in the gas machine where the gas is made? A. I think so.

Q. Are you a practical miller? A. Yes, sir.
Q. That is your business, is it? A. Yes, sir.
Q. What is a "Cut straight"?

The Court: Let us get along, Mr. Witness. If you know, answer. If you do not know, say so.

A. I do not know.

By Mr. Butler:

Q. What is a "straight"?

A. A straight is composed of all the flour in the wheat berry.

Q. If you take ten or fifteen or twenty per cent of the patent streams, is that which is left a "cut straight".

1593 Q. Well, you know as to what I refer, don't you? You know what I refer to, don't you? A. Yes, sir.

Q. What is that practice called in milling?

A. I don't know of the term "cut straight".

Q. What is the practice called in milling, where you are milling a straight flour, to take out some of the patent streams —a small per cent? A. Percentages.

Q. Percentages? Suppose you take out twenty-five per cent of the patent, and run all the rest together. Will the twenty-five per cent of the patent which is taken from the heart of the kernel produce lighter flour than the rest, in color?

A. Yes, sir.

Q. The straight, so cut, will be darker in color, than if the straight had not been so cut, because the whitest has been taken out? A. Yes.

Q. Now, bleaching makes flour white, doesn't it?

A. Yes, sir.

Q. Color, before bleaching, indicated something of the quality of the flour, didn't it—was an index of quality, to a degree? A. Not necessarily.

Q. Not necessarily, but it was, in fact, wasn't it? A short patent is lighter than a long patent, isn't it?

A. Yes, sir.

Q. A patent is lighter in color than a straight, if you do not bleach it, isn't it? A. Yes, sir.

Q. A straight is lighter in color than a clear, if you do not bleach it, as a rule? A. Yes, sir.

Q. Yelloy berry produces a yellower flour than the turkey free from yellow berry, doesn't it? A. Yes, sir.

Q. The bleaching of a yellow-berry wheat brings it to a lighter color, doesn't it? A. Yes, sir.

Q. And, if you make a yellow-berry flour, and bleach it, and lay it a little, or much, as [it] necessary to match it up with flour that is made from turkey that has no yellow berry in it, they will look alike in color, won't they? A. Yes.

Q. Now, wheat fresh from the harvest fields, makes a darker flour and a poorer flour, than the wheat of the same
1594 kind and quality that has been put through the sweat, in the stack, and in the bin, and conditioned by nature, for milling, doesn't it? A. Not darker.

Q. Not darker? A. No, sir.

Q. But, better? A. Yes, sir.

Q. No difference in color? Do you say that the aging and conditioning of wheat does not affect the color of flour?

A. No, sir.

Q. It does not? A. I do not say that.

Q. But it does affect the color, then, doesn't it?

A. Yes, sir.

Q. The color of the flour made from the wheat that has been aged and conditioned, is lighter, is it not? A. Yes, sir.

Q. So that you can take the flour from the fresh wheat, and bleach it, and make it look like flour from old wheat that has been conditioned? A. Yes.

Q. And if the bleaching is used, it brings together the colors of all kinds of wheat, or brings them closer together, doesn't it? A. Yes, sir.

Q. Do you say that the bleaching of a flour made from a poor wheat—the bleaching of that flour makes the flour as good as the flour made from a good wheat? A. No, sir.

Q. It makes it look the same color, doesn't it, if they are both bleached wheat? A. No, sir.

Q. They do not? A. No.

Q. But they will look nearer alike, won't they? A. Yes.

Q. So, it will take the experienced eye of an expert, by comparison, to tell which is bleached and which is not, won't it?

A. Yes, sir.

Q. I have some samples of flour in evidence, here, some bleached and some unbleached. Will you undertake to tell which is which, without comparison with some standard?

A. No, sir.

Q. You cannot even tell the bread, can you?

A. Sometimes.

Q. Well, you cannot, in this bread you brought in here, can you? A. No, sir.

Q. So that the upshot of it is, this bleaching makes all flours look nearer alike than they did before the bleaching, doesn't it? A. Yes.

1595 Q. The good flours and the bad flours, the short patents and the long patents, the flours from the new wheat, and from the old wheat, from the yellow berry and from every other kind of wheat, makes them look nearer alike, and one cannot be told from the other, unless an expert tests them, or compares them? A. Makes them look more alike.

Q. Yes, sir? Do you advertise bleaching for your flour that moves in interstate commerce, in this country, on the sacks that carry the flour? A. No, sir.

Q. Give me the names of the bakers, and produce the letters, if they are in writing, who order bleached flour. Tell me their names and their addresses, every one of them.

A. I cannot name them all.

Q. Well, name all you can.

A. U. P. Steam Bakery at Omaha.

Q. By letter, or orally? A. Orally.

Q. What persons, so we can see them and bring them here and ask them why? A. Mr. Peterson.

Q. What is his first name? A. I do not know.

Q. What is his address? A. Omaha.

Q. What is the location of that bakery?

A. I cannot tell you.

Q. Did he say this to you? A. What is that?

Q. Did he say this to you, personally, that he wanted the bleached flour? A. Yes, sir.

Q. When?

A. Well, we have been making his flour—making flour for him for—

Q. (interrupting) I don't care about that. I asked you when he told you that.

A. Sometime within two or three years.

Q. How much flour does he buy in a year from you?

A. Approximately one thousand barrels a month.

Q. From you? What brand? A. Eighty per cent.

Q. Eighty per cent what?

A. Eighty per cent of the entire flour in the berry.

Q. Is it branded on the bag "Eighty Per Cent"?

A. No, sir.

Q. I asked you what brand. A. He uses his own brand.

Q. What is the name of his own brand?

A. He has no brand.

1596 Q. He uses his own brand, you told me.

A. Yes, sir.

Q. And he has no brand.

A. Yes, sir,—his own sack, I should have said.

Q. Some other baker, now, besides Peterson. Have you got any letters in your files, calling for bleached flour, from these bakers who received it so well?

A. We have, at the office.

Q. Will you produce them? A. I can, but not now.

Q. Well, you will be here long enough to wire to Omaha and get those letters.

A. Well, now, wait. I don't want to get—I think that I can.

Q. Now, can you give us the names of any other bakers, besides Peterson?

A. Now, let me explain. We are not baker millers. We are millers for the family trade. We haven't much baker trade.

Q. Oh, I see. Can you name any other baker, besides Peterson, who said to you, or wrote that he wanted bleached flour? A. I do not call them, now.

Q. You cannot call any but Peterson, and you cannot recall his first name. What is the name of the bakery, again?

A. U. P. Steam.

Q. All bread tastes alike? A. No, sir.

Q. Bread made from poor flour that is unbleached, tastes like bread made from good flour that is unbleached.

A. No, sir.

Q. Bread made from poor flour that is unbleached tastes like bread that is made from good flour, that is not bleached?

A. No, sir.

Q. Doesn't improve the taste, then? Bleaching does not improve the taste, then? A. I think not.

Q. It does not injure the taste? A. I don't think so.

Q. Does not affect the taste, that you could discover?

A. I don't think so.

Q. When did you make these tasting experiments?

A. At intervals along my line of experience.

Q. Do you sell the flour? Are you a salesman?

A. No, sir.

1597 Q. You do not have anything to do with the sales, at all? A. We have a sales manager.

Q. You, personally, do not have anything to do with the sales, do you? A. Only as it is referred to me.

Q. You have charge of the milling operation, in detail?

A. Yes, sir.

Q. Did you ever take out some flour, of the short patent—a very short patent, or some of the patent streams, and bleach the balance and sell it? A. No, sir.

Q. Are you sure? A. Yes, sir.

Q. Do you bleach all your flour? A. No, sir.

Q. Why? A. Some of them request it not bleached.

Q. Oh. What percentage of your flour do you bleach?

A. The eighty per cent of it.

Q. Eighty per cent of your flour? Do you label that, that is not bleached, unbleached flour? A. No, sir.

Q. Do you know of any one in the country who brands their flour as bleached? A. No, sir.

Q. The flour they ship in interstate commerce?

A. No, sir.

Q. You do know, do you not, a number of millers who advertise their flour as not bleached? A. No, sir.

Q. Don't you look at the milling journals, where the millers advertise their flour? A. Sometimes, yes.

Q. Well, haven't you observed in some of these, they advertise that their flour is not bleached? A. No, sir.

Mr. Scarritt: I object to this as hearsay.

A. (Continuing) No, I have not noticed it.

By Mr. Butler:

Q. Never had a dough ball in your flour, since you have been a miller? A. No, sir.

Q. How often do you clean out your agitator?

A. Never cleaned it out.

Q. How often do you clean out your spouts to get the old flour out of it?

1598 Mr. Scarritt: Out of what?

By Mr. Butler:

Q. The spouts around in the leads, and the corners.

A. We never have cleaned them out.

Q. Would you know if they had been cleaned out?

A. Yes, sir.

Q. So, you say that your spouts have never been cleaned out?

A. Not to my knowledge.

Q. And you have been at it five or six years?

A. In this mill we have not been three years, yet.

Q. Well, three years. Your agitator has not been cleaned out? A. No, sir.

Q. Have you one of these horizontal, cylindrical agitators?

A. Two, yes.

Q. Two of them, where the flour is thrown forward?

A. Yes, sir.

Q. And the fans come within a half an inch, or a short distance, anyway, from the side?

A. I don't know as to that distance.

Q. Did you ever look in the interior of those? A. No, sir.

Q. Have you not, in your mill observations, become aware that flour, exposed for a long time,—about five hundred hours, according to the testimony of Wesener—would be turned yellow by the bleaching gas, not so strong as the one in Exhibit 47, but we will say like sulphur—comparable to it?

A. Yes, sir.

Q. You have become aware of that? A. Yes, sir.

Q. Have you become aware that that is known as the xantho, or yellow reaction, which ruins flour by the action of nitric acid? A. I heard the testimony here.

Q. Well, I mean, in your milling operations, before that. Before you heard this testimony, did you know that that stuff was poisonous? A. No, sir.

Q. And you have taken no pains to keep it out of the flour that you put on the market, at all?

Mr. Scarritt: We object to that, because it is not shown that that stuff is in the flour. Expressly stated otherwise,
1599 by every witness on the stand. Nothing of that kind in evidence at all.

The Court: Well, I am not passing upon the correctness or incorrectness of that.

Mr. Butler: Well, that is in the testimony.

Mr. Scarritt: Well, he is assuming that.

Mr. Butler: I am assuming that what will happen in one agitator happens in another, and I am assuming that Wesner told the truth.

The Court: Go on.

A. I know of no accumulation of this flour in our place. I have never seen it.

By Mr. Butler:

Q. No, but you have never looked for it. Five hundred minutes, will do it, Wesner tells us, if it adheres to the wall, and you have never looked for it—never found that, never saw that in your mill anywhere?

A. I have seen it in the flour house—in the flour bin.

Q. You have seen it in the flour bin? A. Yes.

Q. Whereabouts on the flour bin?

A. On the walls of the flour bin.

Q. Now, this flour runs down into the flour bin, and more or less of that dust of the flour rises, and settles around on the walls, I suppose. A. Yes, sir.

Q. Now, in that flour bin, you smell this gas that bleaches the flour? A. Yes, sir.

Q. And you have seen, on the walls of your flour bin, this yellow flour? A. Yes, sir.

Q. That is overbleached or overtreated, haven't you?

A. Yes, sir.

Q. It is about the color of sulphur, isn't it?

A. Yes, sir.

Q. Have you ever taken any pains to avoid that getting into sacks of flour that you sell to the people for food?

A. Yes, sir.

Q. Why? A. Because it was discolored.

1600 Q. Because it would discolor it? How often do you sweep out the yellow stuff, out of your flour bin?

A. About once a month.

Q. What quantities of it?

A. Very small quantity. Possibly ten pounds out of each bin.

Q. How big is the bin that has ten pounds of this yellow flour? I mean, in feet—how long, and how broad. I don't know much about a mill, Mr. Edgecomb, and when you say a bin, I don't know whether it ought to be a large bin, or what size.

A. It is a wooden bin, six by six, probably ten feet high.

Q. And how many of them? A. Two of them.

Q. You get ten pounds of this yellow flour out of that, every month, you think? A. Yes, sir.

Q. Sulphur colored stuff? A. Yes, sir.

Q. And it adheres to the walls? A. Yes, sir.

Q. Sometimes this bin is filled to one height, and sometimes to another, I suppose? A. Yes, sir.

Q. Now, let us call this blotter 6 feet wide, and 10 feet high, and let it represent the bin. Sometimes there is a couple of feet of flour? A. Yes, sir.

Q. Sometimes there is five feet of flour? A. Yes, sir.

Q. It isn't chock-full often? A. No.

Q. But the dust rises to the top, and accumulates on the wall? A. Yes, sir.

Q. And it is from that part that you get the 10 pounds of yellow flour, each month?

A. We get it from the entire walls.

Q. But, of course, if you filled up two feet, and take it out there won't any yellow stuff accumulate on the lower part of the wall, will there?

A. Oh, yes; it adheres to the wall.

Q. But it adheres there, does it? A. Yes.

Q. So that the putting in and taking out, the flour comes right in contact with this stuff on the wall? A. Yes, sir.

Q. But you think it would take off none of the stuff on the wall, or wouldn't it take off some of it? A. Possibly.

Q. Possibly? A. Yes.

1601 Q. How did you get it off of the wall?

A. With a broom.

Q. It sweeps off readily, don't it? A. Yes.

Q. And, in packing, or shoveling the flour out of the bin—do you take it out in shovels, or how do you get that out? Does it run out? A. It is swept off.

Q. No, I mean the flour, itself?

A. It is packed out with a screw.

Q. It is packed out? A. No, it is forced out.

Q. I mean, people don't go in the bin and pack it out with the shovel, do they?

A. In the ordinary case of packing?

Q. Yes. A. Oh, no. It is packed out with a machine.

Q. Now, you wouldn't think that, if you had this yellow stuff here, three weeks and five days having elapsed since you last swept it off the wall, and you filled the bin nearly up to the top, and then when you took the machine and forced it out,—don't you think some of that yellow would come off?

A. I don't believe it would, unless you swept it off.

Q. It sticks pretty well to the wall, does it?

A. Yes. We have to sweep it off.

Q. You have galvanized pipes?

A. No, sir. All wood, lined with tin.

Q. Oh, wood? I mean, to conduct this gas?

A. Oh,—galvanized iron.

Q. All galvanized? Ever clean them out? A. Yes, sir.

Q. How often? A. Once a year.

Q. What do you get out of them?

A. Dust—brown, powdered dust.

Q. I want to show you some brown powdered dust that is in evidence here. I don't know whether we can get that so we can see it very well, to the light, or not, but if you want to, put your hands in and take out a little, or if you have a pocket-knife, or something that you can take out a pinch. (Witness does so.)

Q. That is it.

A. That is very similar to what we get out of ours.

1602 Q. You take that out of your pipe, every year—out of that galvanized iron pipe? It comes from around the corners and angles and along the pipe, or along the walls of the pipe—the entire walls, the upper side and the lower side?

A. Apparently; yes.

Q. Do you notice it is heavier at one part, than the other?

A. No, I didn't.

Q. Now, did you notice whether it was, so you would know?

A. No.

Q. I have an idea that there might be some difference, depending upon the heat near the agitators might drive the gas on, without condensation, to the agitator, and have you ever noticed whether that is true or not?

A. It seems to be coarser at some places than others.

Q. Now, which end did you notice that? Nearer the gas machine, or nearer the agitator?

A. Nearer the gas machine.

Q. Nearer the gas machine? It was coarser and more granular? A. Yes, sir.

Q. Have you an engine there? A. Yes, sir.

Q. Steam engine? A. Yes, sir.

Q. What horse-power is your dynamo for making this bleaching gas, do you know?

A. I think it is a five.

Q. How many have you? A. One.

Q. Only one, and that is a 5 horse-power. Now, about this flour that made this bread. Where did you get this flour that was five or six months old?

A. Some that I had laid away.

Q. Where did you lay it away?

A. Had it piled up on top of the vault.

Q. How's that?

A. Had it piled up on top of a vault.

Q. In sacks? A. Yes, sir.

Q. How many sacks?

A. I think there were 8 or 10 sacks there.

Q. What for?

A. Some we had just simply laid away, as samples.

Q. Samples of what? A. Of unbleached flour.

Q. What did you want them for?

A. We keep samples of sales that we make to parties.

Q. Oh,—you keep flour until it ages, to use it as samples? A. No, sir.

1603 Q. Then why did you put away these sacks?

A. We sell a man ten thousand barrels of flour, by sample: we put away a sample of that flour.

Q. Do you sell bleached flour by sample?

A. Yes, sir.

Q. Do you keep your bleached samples, too?

A. Yes, sir.

Q. Do you keep them together? A. No, sir.

Q. Why? A. Well, we don't want—

Q. You keep them near to each other, I mean?

A. Yes, they are all labelled and tagged.

Q. Yes, I am not suggesting any possibility of confusion, but what I am trying to get at, do you keep them close to each other—the bleached class and the other class?

A. Yes, sir.

Q. For five or six months? A. Yes.

Q. Now, you do know, don't you, that the flour in the bin gives off the bleaching gas, because you smell it there?

A. Yes, sir.

Q. And because it bleaches this stuff yellow, on the wall?

A. Yes, sir.

Q. It isn't within your knowledge, is it, that the bleached flour continues, in small amounts, of course,—perhaps, imperceptibly, not visibly, certainly,—to give off bleaching gas?
A. I don't know that to be a fact.
Q. You never observed that, or thought of it, one way or the other did you? A. No, sir.
Q. So that the flour that made this bread was an unbleached flour, one of these loaves—you can't tell which one—and it had been kept for five or six months, in the same place where you kept bleached flour?
A. At the time of getting this sample, there was no unbleached flour there, except the unbleached samples.
Q. Well, I know, but I am talking about the bleached.
A. We keep the two samples near each other.
Q. In what kind of a room is that—how big a room?
A. It is in our storage room, which is about 30 by 100.
1604 Q. That is the large room where you store your flour?
A. Yes, sir.
Q. Bleached and unbleached? A. Yes, sir.
Q. And sometimes you have great quantities, do you not, of freshly milled bleached flour in there?
A. Yes, sir.
Q. Now, give me an idea of how much?
A. There is frequently 8 thousand sacks in there.
Q. Is it always in sacks, or sometimes in barrels?
A. We mill nothing in barrels.
Q. Sometimes 8 thousand sacks? A. Yes, sir.
Q. Of bleached?
A. Bleached and unbleached.
Q. Well, about 80 per cent of it, bleached?
A. Yes, sir.
Q. And that, when it comes fresh from the packing rooms where you smell the bleaching gas? You take it fresh from the packing room to the storage room? A. Yes, sir.
Q. You sometimes smell a little gas around your storage room.
A. Not around the storage room.
Q. Did you ever try that?
A. I never have detected it.
Q. Well, I know, but did you ever think of it?
A. Yes.
Q. You tried that, did you?
A. Well, I have simply wondered why we didn't smell it, and I have never smelled it.
Q. You thought it was peculiar you would smell it in the flour just before it went to the storage room, and couldn't smell it afterwards?
A. Never smelled it in the flour.

Q. No, but did you smell it in the packing room—that is, your bin? A. Yes, sir.

Q. Well, you wouldn't stick your nose in flour to smell a gas coming off the flour, would you? A. Yes.

Q. Stick it right in the flour? A. Yes.

Q. And because you never smelled it when you stick your nose into the flour, that is the reason you say you don't smell it in the flour? A. Yes, sir.

Redirect Examination

By Mr. Elliott:

1605 Q. Mr. Butler asked you in reference to bleaching different kinds of flours, and various kinds. I will ask you if you wish to be understood as testifying that, if you bleach a flour from an unsound wheat, you can give it the same appearance as a flour from a sound wheat?

A. In color.

Q. In color?

Mr. Butler: Certainly.

By Mr. Elliott:

Q. If you take your grades of flour, and bleach them, is there the same relative difference, after bleaching, as before bleaching, between those grades? A. No.

Q. You think there is not the same relative difference?

A. No.

Q. Now, Mr. Butler asked you about the Updike Milling Company instituting a suit in the courts of Iowa. I will ask you if the Updike Milling Company had any flour seized in the state of Iowa by the Government? A. Yes, sir.

Q. How much? A. Four carloads.

Q. I will ask you if that flour had been bleached in the same way as you had been accustomed to bleaching flour?

A. Yes, sir.

Q. Was any change made in the manner of bleaching that flour, from the way it had been bleached before?

A. No, sir.

Q. What happened to that flour in Iowa, or to those seizure suits in Iowa?

Mr. Butler: Wait a moment. Objected to as immaterial and irrelevant.

Mr. Elliot: No, it isn't irrelevant.

Mr. Butler: Wait a moment. Now, let us have a ruling upon that.

Mr. Scarritt: That is in response to his suggestion, if your Honor please. He asked about this equity suit, and went into the whole proposition.

Mr. Butler: Oh, no.

The Court: He may answer. The case was dismissed.
1606 That's all there was to that. I suppose that's what you want.

A. The cases were dismissed.

By Mr. Scarritt:
Q. By the Government? A. Yes.

Recross Examination

By Mr. Butler:
Q. Now, there was one seizure made of flour which you sold to the United States Government, Mr. Edgecomb?
A. Yes, sir.
Q. That was delivered at Omaha? A. Yes, sir.
Q. In the state of Nebraska? A. Yes, sir.
Q. Before it moved in interstate commerce? A. Yes, sir.
Q. That flour was sold to the United States Government as a straight flour, was it not?
A. I don't know as to the grade, now. I haven't thought about it since.
Q. Now, do you know Mr. Evans?

Mr. Butler: Mr. Evans will you please stand up?

(Does so)

A. I don't know his name, but I have seen him in the mill.
Q. As a government inspector? A. Yes, sir.
Q. At the time that flour, which was delivered to the United States government, for its army was being milled, and packed, wasn't it?
A. I don't know as to that; I know he was there in the mill.
Q. You will not say it was not that day, will you?
A. I do not understand the question.
Q. You will not say that he was not there at the time you milled and packed that flour, that you sold and delivered to the United States government in Omaha, which was seized afterwards, after it had been shipped by the government to another point of consumption in the state of Iowa. You remember the case don't you? A. I remember the sale.
Q. Now, will you say that Mr. Evans, who has just stood up here, was not present in your mill when that flour was being milled and packed? A. No, I do not think he was.
1607 Q. Will you swear he was not?
A. That is my recollection.

Q. How do you fix that it was not at that time?

A. Because I know when he was there, and I know when we was milling the flour.

Q. When was he there? A. I cannot give you the dates.

Q. Now, isn't it the truth and don't you know it to be the truth that that flour was sold to the government on sample as straight flour? A. It was sold on sample.

Q. And the sample was a straight flour, wasn't it?

A. I think that is, for their requirements.

Q. Now, don't you know that, out of that carload of flour that you sent to the government, you took off some patent and that that which was left was a "cut-straight." And that you bleached it, and made it look like a full straight? Don't you know that to be true, Mr. Edgecomb?

A. Can I ask for more definite information?

Q. Yes, ask me anything you want to.

A. You ask so many questions in one there I don't know how to answer you.

Recess was then taken for five minutes.

By Mr. Butler:

Q. Mr. Edgecomb, when the Court paused for the customary midsession recess, I was intending to inquire of you whether or not Mr. Evans, who stood up, was not present at the time of the manufacture and packing of the flour, that you delivered to the United States Government at Omaha, which you did not put in Interstate commerce, and which was subsequently, after the government had moved it, seized under the Pure Food Law because it was bleached, being one of the cases that Mr. Elliott brought forward as a dismissed suit in Iowa? Now, do you remember positively that Mr. Evans was, or was not present at that time?

A. I don't know as he was. He might have been.

Q. He might have been?

A. Yes. I know he was there,—

Q. Now, in cross-examination I chose not to bring up
1608 this incident at all, but I did ask you what a "cut straight" was, and you told me you did not know, but I think we agreed that the straight is all of the flour content of the wheat except the low grades. A. Yes, sir.

Q. And that, if you took out fifteen or twenty or twenty five per cent of the middlings from the center of the kernel that that would be a very short patent and would be a very quite, attractive looking flour without bleaching. That is true, is it not? A. No, sir.

Q. It would be a dark flour?

A. No, it would not be dark, it would be yellow on our wheats.

The Court: Well, we use the word "Yellow" for dark, sometimes, here.

By Mr. Butler:

Q. Then is your short patent darker in color?

A. Yellower, yes, sir.

Q. Than the straight? A. No, sir.

Q. Well, what I am trying to get at is, relatively speaking a short patent is the finer flour—sells for more.

A. Yes, sir.

Q. And if you take a short patent like fifteen per cent out of a straight, you can bleach that and make a very beautiful attractive white flour, that will sell for the top notch?

A. Yes, sir.

Q. Sell for more than the straight? A. Yes, sir.

Q. I believe if you bleached the 85 or 80% that is left which I call the "cut straight" because some millers told me that is the phrase known to the trade, that could be made white, too, by bleaching? A. It can be made white, yes, sir.

Q. So that, by cutting the straight, the miller would profit to the extent of the excess of price of the patent, that is, if you sold me—agreed to sell me a straight flour but instead of doing that cut twenty five per cent out of the straight and bleached it, and made a very high patent, and sold it to brother Elliott for the price of patent, and then gave me the

1609 cut straight, bleached down so it would be a nice color, the miller would profit to that extent, wouldn't he?

A. I should think he would.

Q. Now, isn't that the thing that you did do with that car that was packed for the government and delivered at Omaha. A. No, sir.

Q. Were you in charge of the milling operation there that day? A. In a general way.

Q. Well, did you see that flour milled?

A. No, sir.

Q. Did you not make two kinds of flour when that flour was being milled? A. For the government?

Q. Yes. A. Not to my knowledge.

Q. I don't mean make two for the government but make two kinds and gave one kind to the government, and kept the other under "Updyke's Best." A. Not to my knowledge.

Q. Will you swear that did not occur?

A. Not to my knowledge.

Q. Will you swear that you know that did not happen?

A. Yes, sir.

Q. You did not see it milled? A. No.

Q. But if somebody who did see it and saw part go into sacks labelled "Updyke's Best," and the other part go into

the government's lot, you would think it was done, wouldn't you?

A. Well, it would depend on what he knew about it.

Q. It would depend on what he knew about it? Now, did you never hear of a cut straight? A. Yes.

Q. Did your mill never take out a short patent and bleach it and call it "Updyke's Best"? A. Yes, sir.

Q. What percentage. A. We make twenty per cent.

Q. From fifteen up? A. Yes, sir.

Q. From fifteen up to where? A. Up to eighty.

Q. When you took out the fifteen per cent do you bleach it?

A. No, sir.

Q. You sell that without bleaching? That doesn't need any bleaching does it? A. We don't think so.

Q. Do you bleach what is left? A. Yes, sir.

1610 Q. Why? A. Makes it whiter.

Q. Because it needs bleaching, doesn't it?

A. Yes, sir.

Q. And you bleach what is left,—the other eighty-five per cent until it looks like the fifteen per cent high patent, doesn't it?

A. Now, you have led me astray here; we do not bleach our clears at all. We bleach our eighty per cent.

Q. You bleach your straights.

A. We bleach our straights and our percentages. We do not bleach our clear.

Q. Now your cut straights.

A. I don't know anything about the cut straights.

Q. When you take out a fifteen per cent patent, you have agreed it is a cut straight, don't you.

A. You may term it that. I don't term it that way.

Q. What do you term it. A. I term it a "cut patent."

Q. Oh, that is a short patent. A. Yes.

Q. It is also a short straight, isn't it.

A. Well, one would increase in flour as the other decreased.

Q. All right. We have got our terms. Maybe I was mistaken "Cut patent." I will mark that down. You make cut patents down to fifteen per cent, don't you.

A. Fifteen per cent of clear.

Q. Oh, no, the cut patent contains fifteen per cent middlings doesn't it. Cut patent is a middling flour isn't it, made from middlings. A. Yes, sir.

Q. And you make that as short as fifteen per cent, don't you?

A. Oh, no, we make it all patent but fifteen per cent.

Q. Then that is the clear. A. That is the clear.

Mr. Elliott: I was just going to suggest to you that he was talking about the other end of it, and you thought he meant the fifteen per cent was this patent.

Mr. Butler: Oh, yes, I see.

Q. So, it is the clear you do not bleach. A. Yes.
Q. Because it will not age clear flour? This process will not age clear flour. A. Yes.
1611 Q. Then why don't you bleach it so that it will be better?
A. I never thought that it improved the selling qualities of the clear by bleaching it.
Q. No, but it makes it better? A. It ages it.
Q. Well why don't you bleach it. Because it doesn't improve the selling qualities isn't it. A. Yes.
Q. So you do not bleach anything except when it improves the selling qualities, isn't that it.
A. And the baking qualities.
Q. It would improve the baking qualities of the clear, wouldn't it? A. Yes, sir.
Q. But it would not improve the selling qualities.
A. No, sir.
Q. And that is the reason you don't bleach it? A. Yes.
Q. So, then, the selling qualities is what must be improved or you won't bleach it? A. No, sir.
Q. That is true, isn't it? A. No, sir.
Q. What flour do you bleach, when it doesn't improve the selling qualities? A. There isn't any flour.
Q. So all-flour that you bleach is improved as to selling qualities. A. Yes, sir.
Q. And you bleach none unless you can make it sell better by bleaching. A. Yes, we bleach it for aging.
Q. Well, but it makes it sell better? A. Yes.
Q. So unless it sells better you do not bleach it?

The Court: Answer, let's get along please. Answer that.

A. It makes it sell better.

By Mr. Butler:
Q. It that the only answer you will give me to that question? A. We bleach it because it sells better.

Mr. Butler: That is all.

The Witness: I would like to add because it ages.

The Court: It sells better and because it ages it.

Mr. Butler: I want to ask another question that I over-
1612 looked. Do you label your flour "patent"?

A. I think our Updikes "Pride of Omaha" is labelled patent.

Q. Was any of the flour that Mr. Elliott brought out that was seized in Iowa labelled "patent."

A. I don't know as to that.

Q. You know it was not don't you?

A. That is my recollection, that it was not.

Q. And you know you were instructed by your lawyer, Mr. Smith not to label your bleached flour "Patent", after Secretary Wilson's order and before those seizures. You know that, don't you. A. No, sir.

Q. Well, don't you know that that was the instructions to this organization of millers, not to label their bleached flour "Patent." A. Not to me.

Q. But you did not label it patent? A. No, sir.

Q. Wasn't it good enough to be labelled patent?

A. Yes, sir.

Q. Then why didn't you label it patent? You used to. Why didn't you label that patent.

A. We were threatened with mis-branding.

Q. Yes, sir. You expected that car to be seized, didn't you? A. We expected—

Q. Not that you sold the government but the other?

A. Yes, all of our flour.

Q. And you made a nice flour, didn't you, as nice as your patent, and you didn't label it patent? Isn't that the truth, because you expected it to be seized? Isn't that so, and you were fixing up flour and your brand so it could be seized, so you could win some suits, wasn't that it? A. No, sir.

Q. Why didn't you label it patent.

A. It was labelled just as our flour was always labelled.

Q. Now, didn't you label that very kind of flour "Patent" before the order, and wasn't it, as you just stated, to avoid a charge of mis-branding, that you did not label that "Patent" because you expected it to be seized.

A. We expected all of our flour to be seized.

1613 Q. And that is the reason you did not label it "Patent" isn't it?

A. I don't know what it was labelled. I cannot testify to that.

Q. And you do not know the reason do you? A. No, sir.

Q. The president attended to that, didn't he?

A. No, sir.

Redirect Examination

By Mr. Elliott:

Q. About this flour that was sold to the government. I want to ask you if that flour was sold on sample?

A. Yes, sir.

Q. And did the flour that you delivered to the government come up to that sample.

A. It was inspected in the mill, and accepted.

Q. That is, did the government send some one there to inspect the flour before it was delivered.

A. They always do that.

Q. And they did do that in that case, did they?

A. That is my recollection.

Recross Examination

By Mr. Butler:

Q. Where is the specifications? The government prepares specifications.

A. Yes, I haven't them with me.

Q. That calls for straight flour, doesn't it.

A. Yes, sir.

Q. So that this talk about selling on samples does not make any difference; you were bound to furnish a straight flour, weren't you if you kept up to your contract. Now, weren't you?

A. Well, we didn't give them a straight flour.

Q. No, I know you did not.

A. We never do, anybody.

Q. No, but the government's specifications call for straight flour and always do? A. Yes, but they don't—

Q. They don't get it.

A. They don't know what straight flour is.

Q. I know.

A. Now, here, let me explain. Let me explain, will you please.

Mr. Elliott: Yes, sir, you can explain.

Mr. Butler: Wait a minute.

1614 Mr. Elliott: No, let him explain, Mr. Butler.

The Court: Let him explain.

A. Nobody makes a straight flour. It would not be a commercial article. We all draw off a ninety—five per cent which is known as "Red dog" or low grade.

The Court: You mean five per cent.

The Witness: Five per cent. We all draw off five per cent of low grade, or "red dog", and the rest of it is commercially straight grade flour. The government nor nobody else would have accepted a strictly straight grade flour.

By Judge Scarritt:

Q. And you mean by "Straight grade" everything that comes out?

A. Everything that comes out of the wheat berry.

By Mr. Butler:

Q. Bran and all?

A. No, sir, but the finer impurities that are taken out of the low grade being about five per cent. This makes it a commercial, so-called.

Q. Whole wheat flour containing the whole wheat is called graham, after the man that started it isn't it?

A. No, sir.

Q. What is graham?

A. Graham is the entire berry ground up.

Q. Well, that included the bran doesn't it?

A. Yes, that contains the bran.

Q. That is what I said.

The Court: That is, whole wheat flour?

The Witness: This graham.

The Court: Well, whole wheat isn't it too.

The Witness: No, sir, not the commercial whole wheat flour.

By Mr. Butler:

Q. Now, you told me since the recess, if my memory is right as to the time,—I know it is as to the fact—that straight flour is the whole flour content except the low grade?

A. Yes, sir.

Q. That is known to be true by millers?

A. Yes, sir.

1615 Q. It is known to be true in the trade?

A. Yes, sir.

Q. It is known to be true by the government purchasers for the army? A. I don't know as to that.

Q. And they call for a straight, don't they, and don't get it. A. They get that five per cent off.

Q. Now, will you say that that is all that was taken off of there. A. To my knowledge, yes.

Q. To your best knowledge? A. Yes, sir.

Q. If it was done you did not see it done? A. No, sir.

Q. Do you know the car number that took it?

A. No, sir.

Q. Was it put in a car for the government?

A. It was loaded in a car, yes.

Q. For delivery there at Omaha? Where is your mill—at Omaha? A. North 16th.

Q. And to deliver to the government quarters there in Omaha did it move in a car?

A. They ordered it from the mill into the car.

Q. Can you advise us the car number. A. Not now.
Q. You could wire up and get it? A. I could.
Q. You could wire up and get it? A. Yes, I think so.
Q. And the date? A. I think so.
Q. And the contents. A. Yes, sir.
Q. The number of sacks? A. Yes.
Q. Will you do that for us? A. I can, yes.
Q. And hand it to me as soon as you get it?
A. Shall I send it to you to-morrow.
Q. Do you want to go home. A. Yes.
Q. Very good. A. Sir?
Q. If you will, send it to me.
A. Yes, I will send it to you and give you the full information.
Q. Give us the full record of the car? A. Yes, sir.
Q. Give us the name of the man who milled it? Now, the man who would know. The man who would know, not by hearsay, but the man who would know himself what went into it,—what streams. A. Yes.
1616 Q. Did you ever have any flour returned to you that was bleached? A. Not to my knowledge.
Q. Did you ever have any bleached flour returned to you?
A. Not to my knowledge.
Q. Did you sell some to an industrial school,—some bleached flour, and they returned it to you because it was bleached?
[Q.] I believe we did, as you refresh my memory.
Q. When was that?
A. I could not give you the dates. About the same time that we had the flour attached by the government.
Q. Sometime within the last year?
A. Yes. They refused the flour on the ground it was bleached.
Q. What is that industrial school? Was that a state institution? A. Yes, sir, a state institution.

The Court: What state?

The Witness: State of Iowa.

By Mr. Elliott:
Q. Was that flour that was delivered to that school the flour that was seized by the government? A. No, sir.
Q. That wasn't the flour?
A. No. We were awarded the contract for the flour for the industrial schools, and at the time the agitation came up as to the bleached flour they returned some bleached flour.

By Mr. Butler:
Q. Will you define "Updyke's Best", whether it is a clear, patent straight, or what it is?

A. It is eighty five per cent.
Q. Always? Always eighty five per cent.
A. Varying from eighty to eighty five per cent.
Q. Always? That is an eighty five per cent patent? You do not label it "patent" but [it] what is known as a patent, isn't it?
A. Speaking from a miller's standpoint it is patent, yes, sir.
Q. What is the "Pride of Omaha?"
A. That is the same grade.

The Court: What?

A. The same grade.

By Mr. Butler:
1617 Q. The same as Updyke's Best?
A. Same as Updyke's Best and same as Pride of Omaha
Q. They are the same, are they?

The Court: Same flour you brand differently.

A. Yes.

Whereupon Court adjourned to meet again at 2 o'clock P. M. Wednesday, July 22nd, 1910.

Pursuant to adjournment, court met at two o'clock P. M., Wednesday, June 22nd, 1910, and proceeded with the trial of said cause further as follows:

Adolf Boettler, being called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:
Q. State your name. A. Adolf Boettler.
Q. What is your residence? A. St. Louis.
Q. What is your business? A. Baker.
Q. How long have you been in the baker business?
A. Approximately thirty-six years.
Q. What is your present connection with the baking business?
A. I am president of the American Bakery Company, St. Louis, consisting of seven bakeries.
Q. Who does the buying of flour for that concern?
A. I do.
Q. Approximately how much flour do you buy in the course of a year, for those seven bakeries?
A. About one hundred and fifty thousand barrels.
1618 Q. I will ask you if you have ever bought any bleached flour. A. Yes, sir.

Q. I will ask you if, in buying flour, you ever distinguish between bleached and unbleached flour, on account of bleaching, or do you buy either?

A. I buy either, if it has the quality.

Q. Have you ever bought any flour from Mr. Larabee, of Kansas? A. Yes, sir.

Q. Have you bought flour from Mr. Larabee, knowing it was bleached? A. Yes, sir.

Mr. Butler: Wait. I think we will object to that as incompetent and immaterial.

The Court: Who is Larabee?

Mr. Elliott: Larabee is a miller at Hutchinson, Kansas.

The Court: Who is he? I do not recall him.

Mr. Scarritt: We will have him on the stand.

By Mr. Elliott:

Q. The question is, have you bought flour from Mr. Larabee, knowing it was bleached? A. Yes, sir.

Q. Now, I will ask you, Mr. Boettler, what, in your experience, is the effect produced in flour, as to its baking qualities, and so forth, of bleaching it?

A. In my opinion, at the early stages—I mean, at the early crop, artificial bleaching ages it the same as the natural bleaching, and thereby prevents what we call sweating.

Q. And what change, if any, does it make in the color?

A. In the baking, you mean?

Q. In the color of the bread or loaf.

A. Well, bleached flour has a whiter color than unbleached.

Q. That is, the loaf from the unbleached?

A. Yes, than the unbleached, when it is fresh ground.

Q. Now, I will ask you if you have ever examined loaves of bread made from bleached and unbleached flours, and if so, have you noticed any differences in odor or taste?

A. None whatever.

Q. First, you have made such examinations, I understand.

A. What is that?

1619 Q. First, you have made such examinations?

A. Certainly,

Q. And you say you have found no distinction?

A. None whatever.

Q. Have you ever known the baking qualities of flour that has been bleached, to be impaired by such bleaching?

A. We have had it in the various plants, knowing it to be bleached, and never any difference was noticed.

Cross-Examination

By Mr. Butler:

Q. In your purchasing of bleached flour, do you habitually require them to tell you whether it is bleached or not?

A. Not always, no, sir.

Q. Generally?

A. If I would suspicion it was bleached, I would ask them whether it is bleached.

Q. You want to know, don't you?

A. Oh, I don't always make a practice of that; no.

Q. No, but you generally ask?

A. No, sir. No, sir.

Q. Well, if you suspicion it, you always ask?

A. If I think it is rather white, I ask them whether it is bleached, and I have applied, heretofore, the so-called government test, with that acid.

Q. You keep the acid on hand, to test it?

A. Oh, I have tested it on old flour, unbleached, and found the same results.

Q. So, you cannot tell? A. No.

Q. So, you are not skillful enough even to tell with the govenment test?

A. I am not a chemist.

Q. Don't you think it would be a good way to have them brand their flour "Bleached"? A. I think so, yes.

Mr. Scarritt: We object to that as incompetent, irrelevant, and immaterial, invading the province of the jury.

The Court: He may answer.

Mr. Scarritt: We except.

By Mr. Butler:

Q. You do not find the word "Bleached" on the sacks, 1620 very often, do you?

A. I have never taken notice of that. Never asked it, or anything.

Q. You are familiar with the flour market in St. Louis, aren't you. A. With what?

Q. You are familiar with the flour market in St. Louis?

A. Well, you mean St. Louis flour, or the St. Louis flour market?

Q. No, the flour on the St. Louis flour market.

A. The St. Louis flour market—that is, the price, and so forth? Yes.

Q. And the kinds of flour, and so forth?

A. The flour we use for our own purposes, is not two per cent St. Louis flour. Comes from Kansas and Minnesota.

Q. But you are familiar with the market down there?

A. Why, certainly.

Q. Do you know of any bleached flour advertised in the newspaper, that is bleached?

A. Not that I know of.

Q. You do know some who advertise it is not bleached, don't you? A. Yes.

Mr. Scarritt: We object to that as irrelevant.

The Court: He may answer.

Mr. Scarritt: Save an exception.

By Mr. Butler:

Q. And you cannot tell by looking at flour whether it is bleached or not, can you?

A. Well, I'll tell you, I would not always swear to it, that it was bleached, or not. I have seen flour that was not bleached, looked as white as bleached, and I have seen flour that was bleached, and you could not tell the difference.

Q. Mixed up every way, isn't it? Sometimes the bleached flour is not as white as unbleached and sometimes it is whiter?

A. That depends on the flour that is bleached.

Q. But bleaching flour makes it whiter, doesn't it?

A. In a measure, yes.

Q. Somewhat whiter?

A. But it doesn't improve the quality.

Q. Not a bit? A. No.

Q. All it does, is make it whiter?

A. It may deceive the eye.

1621 Q. That is right. May deceive the eye, and the eye is what you use to go by in buying flour?

A. Well, the eye, as applied to one individual, as against another is very deceptive.

Q. I know, but I am speaking now, about ordinary men having to believe what they see. They have to rely upon their eyes, and what they see?

A. Well, if you ask me that question—I have gone among our works, almost every day, nearly, and no two of the men have the same opinion about color.

Q. But what I am trying to get at is this; do you know the flour called "patent"? A. So-called patent.

Q. A good, low per cent patent, is very good flour, if it is made from good wheat, isn't it?

A. My judgment on flour is, that the patent, and the quality, depends entirely upon the character of wheat that the miller is grinding.

Q. But I say, if it is good wheat, and a nice, short patent, it is a good flour?

A. What do you mean by "short patent"?

Q. Fifty per cent.

A. There is no such thing made as a fifty per cent patent, by any mill.

Q. A seventy per cent.

A. Very little of that. The average mechantable flour is, if you use the term "patent", it is very misleading. The term "patent" is very misleading, or, rather, the percentage is very misleading, because it depends upon the quality of the wheat that the miller grinds.

Q. And you do not think that bleaching will make good flour out of poor wheat? A. No, sir.

Q. It will make white flour, though?

A. Well, that, I am not experienced enough to tell, because I don't look. If I see poor flour, irrespective of color, I don't buy it.

Q. Now, before this bleaching came on, did you used to buy flour?

A. Yes, sir. Certainly. I have bought flour for over thirty years.

Q. There were a good many different kinds of colors, weren't there?

A. Not so very much difference in the colors, when it comes to a flour that comes from certain parts of the country.

Q. Good flour always had a pretty good color, didn't it?

1622 A. Yes. Should have a good, solid color.

Q. Yes.

A. And it may be yellowish, or may be creamish, or white.

Q. But the creamish, is the beautiful part of it, isn't it?

A. Yes, sir, in the eyes of an experienced man, but the public, generally, don't want it.

Q. But you are an experienced man? A. Yes.

Q. Light cream color of the high patent, from the good wheat— that is the most beautiful flour in the word, isn't it?

A. Right you are, sir, but—

Q. (Interrupting) And when you bleach—

Mr. Scarritt: (Interrupting) Let him finish.

By Mr. Butler:

Q. But what?

A. But if you bleach that very same flour, it does not deteriorate it.

Q. It does not poison it?

A. It does not hurt it any.

Q. I am not talking about that. Now, if all the flour was of the beautiful, creamy color of an honestly milled, honest patent, from good wheat, it would be good enough for anybody, wouldn't it? A. Well, I will answer that.

Q. In color.

A. On fresh flour, for instance, I would prefer bleaching, on fresh, new wheat, I mean, under the same conditions.

Q. But you know fresh wheat is not fit to mill, don't you?

A. Oh, I beg to differ with you. I beg to differ with you. We have—

Q. (interrupting) Don't you know that all the millers keep a little old wheat, and mix it in with the fresh, and blend it, and then bleach it, and sell it as high patent, old flour?

A. They could not get the wheat, last year, to use that.

Q. But they bleach it, and make it white, like old wheat flour, wouldn't they?

A. If they don't put the quality into the flour, they can make it ever so white, and when the baker bakes it, it isn't fit to bake.

Q. Does bleaching improve the gluten?

A. It don't improve it, no, sir, and it don't help it.

1623 Q. Does aging improve it?

A. It don't either. It improves color.

Q. So, you are the kind of a baker that says that storing of good, honest flour for three months, doesn't improve that?

A. It improves it in color.

Q. That is all?

A. Yes, sir, and it dries it out, and of course it has more absorption, but it doesn't improve it in color, any more than drying it out.

Q. Now, let us be clear about that. From your experience in thirty-six years as a baker, you say the truth is, that the natural aging of flour does not improve anything, except the color and drying it out a little? It does not improve the gluten?

A. From our standpoint, it will take more absorption, because it is drier than the fresh milled flour.

Q. You like it better because of that, do you?

A. Because it is drier.

Q. Don't you know that hot air would dry it out?

A. I don't know whether hot air would dry it out. No it does not.

Q. Hot air does not dry flour?

A. It don't make that chemical change that nature gives wheat, from its earliest stages, up to the time it ages.

Q. Then you find there is a chemical change in the natural aging? A. In my opinion.

Q. And hot air will drive out water, but it won't work the chemical change, will it?

A. I don't think so. I am not a chemist.

Q. No, I know you are not, but I would rather have the judgment of a sensible man, who has had a large amount of experience, than some chemists I have seen.

A. So-called experts.

Q. So-called who make a business of being experts. You say though, that your observation is, that there is a chemical change in the flour?

A. At certain seasons of the year, in my opinion.

Q. And you say that improves the flour, don't you?

1624 A. After it has gone through that process, it is improved.

Q. Well, now, you don't know what chemical change takes place when this poisonous gas is put into flour, do you?

Mr. Scarritt: We object to that assuming that poisonous gas is put into flour.

Mr. Butler: Everybody has testified to it, who has testified on that subject.

Mr. Scarritt: It doesn't make any difference.

The Court: Go on.

A. I say that the artificial bleaching hastens the process along. That is my opinion.

By Mr. Butler:

Q. You cannot find out just what the chemical change is?

A. No.

Q. Now, good patent flour, made from good old wheat,—does that have to be bleached, too?

A. Not necessarily, no.

Q. Does it improve that, too?

A. I don't know. I haven't followed that.

Q. Well, this flour that was seized here, was made from what the millers call "first quality, hard wheat" and it was old, because it was May, and the wheat was raised last year. Now, if that was "first quality, hard, old wheat", it did not need any bleaching, did it?

A. If it was Nebraska, and they wanted color.

Q. If it was flour made out of yellow berry, they would have to bleach it, to make it look like flour that was not made out of yellow berry wheat?

A. Oh, I don't know that it would do any harm.

Q. I am not talking about the harm. The color doesn't do any harm, either, does it? A. No.

Q. But, if this flour was made out of yellow berry, and they wanted it to look like flour that was not made out of yellow berry they would have to bleach it, wouldn't they?

A. Either naturally, or properly by the process. I don't know. I am not familiar enough with Nebraska flour, because we don't practically, use it.

Q. You don't know much about that?

A. We don't, practically, use Nebraska flour. We never did.

1625 Q. But you do know yellow flour bleaches white, don't you?

A. To what extent, I don't know. Of course, any flour will bleach, if they bleach it.

Q. Did you ever see these bleachers working?

A. Yes, sir. Saw it once.

Q. Do you know they can bleach it until it turns a dead white, and then that it turns yellow, like sulphur?

A. No, I do not know that extent.

Q. Don't you know that they can take the yellow berry, just as this miller told us this morning—take the yellow berry and bleach it, so it will look like the flour where there is no yellow berry in it?

A. I am of the opinion if they over-bleach it, it will ruin the flour.

Q. Poison it? Don't you think so?

A. They may ruin the strength of it.

Q. And poison it, too? A. I don't know.

Q. (Showing the witness an exhibit) You don't think flour that is colored that way is much good?

A. No, I would not use it, but we have used thousands of barrels of bleached flour, but we have never had anybody coming back and saying they were getting sick.

Q. What makes you think it will spoil the flour if they over-bleach it? Who told you that?

A. That was in casual talk with flour men, and flour dealers.

Q. Flour dealers? A. I never spoke to millers about it.

Q. So, it is common knowledge among the millers and flour dealers of the St. Louis market, that, if it is bleached too much, it spoils the flour, is it?

A. That is the talk of some—the expression that some make. I have no verification of it.

Q. You believe it, don't you?

A. I don't know whether it is so or not.

Q. You do not know whether it is so?

A. Because I am not partial on bleaching.

Q. Now, let me see. Do you make cake, down there?

A. Oh, yes.

1626 Q. Did you try this bleached flour, to make your cake with?

A. We use winter wheat for that, and we don't care whether that is bleached or not. We don't inquire about that, at all.

Q. Does it improve the winter wheat?

A. In cake flour, it is an entirely different proposition. Cake flour is winter wheat.

Q. Do you ever use any bleached flour to make cakes with?

A. Not that I know of. I might, and I might not, because we do not inquire about it. We just want white flour.

Q. Do you use eggs, when you use flour to make cakes?

A. Yes, sir.

Q. What kind of eggs do you use?

A. We use eggs that we buy in the market.

Q. Well, I know, but do you use preserved eggs?

A. We use case eggs.

By the Court:

Q. Use what? A. Case eggs,—shell eggs.

By Mr. Butler:

Q. Now, let me be clear about that. Is there such a thing as eggs preserved with borates?

Mr. Scarritt: We object to that as immaterial.

Mr. Butler: I want to find out how that works with bleached flour.

Mr. Scarritt: It has got nothing to do with the issues in this case.

The Court: Go on.

A. There are preserved eggs, but I don't know what they are preserved with.

By Mr. Butler:

Q. Did you ever try preserved eggs, to make cake with unbleached flour? A. Undoubtedly.

Q. Now, I would like to know where you got those eggs and how they were preserved.

1627 Mr. Scarritt: We object to this line of testimony, if Your Honor please,—immaterial.

The Court: He may answer.

A. The eggs we used for some time were canned eggs.

By the Court:

Q. What? A. Canned eggs.

By the Court:

Q. Canned? A. In tin cans and kept in cold storage.

By Mr. Butler:

Q. In shells? A. Oh, no. Cracked.

Q. You mean liquid eggs? A. Liquid eggs.

By the Court:

Q. Make cakes with them?

A. Make cakes with them and nobody ever complained. They were guaranteed to us, and the Pure Food Act, when they notified us, we discarded them.

By Mr. Butler:

Q. Did you hire any lawyer to find out that the law was unconstitutional?

Mr. Scarritt: We object to that as absolutely immaterial and improper.

The Court: Objection sustained.

By Mr. Butler:

Q. Now, did you ever try those liquid eggs—these canned, liquid eggs, no shells, I think, at all—

A. (Interrupting) No shells at all, no.

Q. How big a can do they come in.

A. I would have to refer to the other gentleman.

Q. Well, you may ask him.

A. (To the party referred to) I believe ten-gallon cans, wasn't it?

Party referred to: Forty-four pounds to a gallon.

A. (continuing) Forty-four pounds to a gallon.

1628 By Mr. Butler:

Q. How big is a forty-four pound can of liquid eggs?

Mr. Helm: It is forty-four pounds.

By Mr. Butler:

Q. What size is it. Is it as big as this waste basket?

A. It is a square can.

Mr. Scarritt: I object to this as irrelevant and immaterial.

Mr. Butler: I want to find out how it works with bleached flour.

Mr. Scarritt: What have eggs got to do with it?

By Mr. Butler:

Q. Are eggs used by bakers? A. I should think they are.

Q. Yes. Eggs used with flour? A. Yes, sir.

Q. Now, you have used these liquid, preserved eggs, with unbleached flour, have you?

A. Well, I don't know whether the flour, for that purpose, was bleached or unbleached.

Q. Now, did you ever notice any difference in the flavor of the cake made by bleached flour and preserved, liquid eggs, from cake made from honest, unbleached flour, and fresh hens' eggs?

Mr. Scarritt: We object to that as irrelevant, incompetent and immaterial, and having nothing to do with the issues in this case, and move to strike out the improper remarks of counsel assuming that one flour is "honest", and another flour is dishonest.

Mr. Butler: Well, I will leave out the word "dishonest". That was improper, Judge Scarritt.

Mr. Scarritt: Of course, it would be improper. This is not a justice of the peace court.

Mr. Butler: I will withdraw it. I would not put a question that you did not like for anything in the world, Judge Scarritt.

Q. Now, let us take case of honest, bleached flour—of
1629 honest bleached flour—

Mr. Scarritt (interrupting): We object to that. That is the very thing he withdrew.

Mr. Butler: No, I said before "honest unbleached".

Q. We will say "bleached flour", then and unbleached flour. Cake made with the bleached flour and liquid, preserved eggs, —how does its taste compare with the cake made from the unbleached flour, and fresh hens' eggs, if you have ever tried the latter?

A. That would require a Philadelphia lawyer to determine.

Q. No baker could tell? A. No.

Q. Now, did you ever notice any difference in the taste of bread stuffs, made from preserved eggs, and bread stuffs made from fresh hens' eggs?

A. I will answer that. My folks get the same stuff that we bake, at home. I am not a cake eater, but I have never heard them to kick.

Q. And never killed them either, did it?

A. No, and they are healthy, too.

Q. What are their occupations—civil engineers, and locomotive engineers? A. Well, they are neither.

Q. Does bread have any taste? A. Certainly does.

Q. Does it have any odor?

A. It will have odor, if you don't handle it right.

By the Court:
Q. What? A. If you do not bake it right.

By Mr. Butler:
Q. But I mean bread baked right, does it have any aroma?
A. It has a certain aroma, due not only to the flour, but the manner in which you bake it, and the ingredients you put into it.
Q. Well, now, let us see (handing the witness a loaf of bread). See if you get any aroma from that loaf, right there.
A. It has got the regular flour aroma, and there is no shortening in it.
Q. How about this one? A. I can tell no difference.
Q. You cannot tell any difference between the two?

1630 Mr. Scarritt: What are these?

Mr. Butler: Exhibit 247 and 248.

By Mr. Butler:
Q. Did you ever have any flour that you could tell the difference between—

By Mr. Scarritt:
Q. (Interrupting) One is bleached, and one is unbleached. Which is it. A. I do not know.

Mr. Scarritt: One is bleached by nature and the other is by the Alsop process, and there is no difference.

Mr. Butler: Which is which?

Mr. Scarritt: Do you want me to go on the witness stand?

Mr. Butler: You have not called any witness who could tell, yet.

Mr. Elliott: Our own witness said he could not tell the difference.

Mr. Butler: That is what I say. Nobody can tell. Not if you store flour in a gas room. They will all be alike.

The Court: Let us get on.

By Mr. Butler:
Q. Does the bread from winter wheat smell the same as bread from spring wheat?
A. What do you mean by winter wheat?
Q. Don't you know what winter wheat means?
A. We have two kinds, soft and hard.
Q. Soft.
A. Soft winter wheat, we don't use for bread purposes.
Q. Hard.

A. Hard, is such as Kansas Turkey hard wheat, and the Nebraska.

Q. Is the smell from that bread, the same as it is from the hard spring wheats? A. Why, certainly.

Q. Is there any difference in the smell of bread from good flour, and from bad flour?

A. Well, if you take low grade flour, you can not only smell it, but you can tell it.

1631 Q. Tell it by the smell?

A. Yes, or tell it by the coloring.

Q. But if it is bleached, can you tell by the coloring?

A. Why, certainly.

Q. Tell a low grade?

A. Low grade bleached, will give itself away, when they are baked by showing its true nature.

Q. Before you bake it, how?

A. What do you mean by before.

Q. How can you tell it, before baking.

A. If you handle much flour, you can tell, because it is not the same as a good flour.

Q. Doesn't the bleaching improve the quality of flour?

A. No, sir, not that way.

Q. Do you mean to say that bleaching will not improve gluten, wherever it finds it? A. No, sir, I do not.

Q. It improves the gluten of flour, doesn't it—works the chemical change? A. Why should it improve it?

Q. It works the chemical change, just like nature, doesn't it?

A. It only obviates that mysterious improvement of nature in the nature of the wheat, from new flour, is my opinion.

Q. Yes, but that is the chemical change you told me about?

A. Yes, but what bearing has that, on the gluten?

Q. Doesn't that change the quality of the gluten?

A. I don't know. When flour is in the sweat, it is not fit to use.

Q. But doesn't this mysterious change of nature improve the gluten?

A. You will have to ask a chemist about that.

Q. But I mean, as a practical baker.

A. I don't know what the cause of the change is. It is a change that nature produces.

Q. Well, I know, but does it improve the gluten?

A. It improves the strength of the flour.

Q. Yes.

A. That is, in other words, when the flour is in the sweat, it is no good, at all.

Q. Now, does bleaching improve flour that has not sweat? Does bleaching improve the quality of flour that has not sweat?

A. If it has passed sweating, it has, of necessity, got aged.
Q. But, if it has not begun to sweat, does it improve that?
1632 A. I am of the opinion that, if the flour of a wheat has not sweat, and you bleach it, you obviate the danger of sweating.
Q. You obviate the danger of sweating? A. Yes, sir.
Q. What is the danger of sweating?

Mr. Scarritt: Get the same results.

Mr. Butler: Now, wait a moment Judge. I will put you on, next.

A. The danger of sweating is this: when it is in the sweat it is absolutely unfit to use. We could not make a loaf of bread out of it, if we wanted to.

By Mr. Butler:
Q. Now, let us go slow. So, your experience is, with flour made from old wheat, that it is absolutely useless, at any time after it is milled, if it is not bleached? Is that your experience? A. Put that question again.
Q. Flour made from old wheat. A. Yes.
Q. Does it sweat?
A. From old wheat? You mean, for instance wheat from last year, and ground today?
Q. Yes.
A. No. I do not think there is any possibility of it sweating.
Q. So that this flour that was seized, if it was made from old wheat, would never sweat, would it?
A. Not if it is made of old wheat, that has been duly seasoned.
Q. But now, you say that flour made from new wheat, will sweat, and sometimes spoil, won't it?
A. It will, after it goes through the sweat, yes, sir.
Q. But it sometimes spoils in the sweat, doesn't it?
A. We have never had any that was spoiled.
Q. Doesn't it get a little musty?
A. No, sir, we have never had it to spoil.
A. Now, do you think bleached flour improves with age?
A. You mean in color?
Q. Yes, and in quality.
1633 A. No, I do not think it does.
Q. You do not think it does? A. No.
Q. So, you think it preserves it, then, just like it is?
A. I think after it is bleached artificially, it is just the same as bleached, naturally.
Q. Does it go back, in quality?
A. No, sir, no such a thing.

Q. It does not improve, and it does not retrograde?
A. No, sir.
Q. So, your experience is, that the bleaching fixes it so it does not change, one way or the other?
A. I am not speaking of experience. I am speaking of opinion.
Q. That is your experience and opinion generally, is, that the bleaching preserves it from change, either to improve, or to grow worse. Is that it?
A. I have used bleached flour ever since its incipiency, before the government ever questioned it, and the only claim I make, in behalf of bleaching was, that it eliminates the danger of—or, practically,—yes, eliminates the danger of having sweaty flour which is unfit to use.
Q. Then, you hold that the bleaching preserves it, and prevents change for the good, or change for the worse?
A. No. I am of the opinion that the bleaching does exactly what nature eventually does.
Q. Well, flour that is not bleached, improves, doesn't it?
A. With age?
Q. Yes. A. Certainly.
Q. Does flour that is bleached improve with age?
A. It practically remains the same as when bleached.
Q. Does it get worse? A. I don't know.
Q. Then, if it does not get worse, and if it does not get better, it is preserved, isn't it?
A. I don't know what you mean by that term "preserved." If that flour—
Q. (interrupting) Now, don't you know—

Mr. Scarritt: (interrupting) Wait a moment. Let him answer.

1634 Mr. Butler: I am going to find out if he doesn't know what I mean.

Q. Don't you know what a preserved egg is? A. Yes.
Q. It is an egg that doesn't change, isn't it?
A. But you are putting a chemical in that. That preservative is a chemical.
Q. That preservative is a chemical? A. Yes, sir.
Q. You don't know much about chemistry, do you?
A. No, I don't pretend to know anything about it, any more than the ordinary man.
Q. So that, you think the difference between the preserved egg, and the bleached flour, is, that the egg has a chemical used, and the flour hasn't it? Is that it?
A. Yes, I think the egg has the chemical in it.
Q. Now, you understand that this flour is bleached by pure air, don't you? A. How?

Q. You understand that this flour—
A. (interrupting) No, it is bleached by gas.
Q. Isn't that a chemical?
A. Gas evaporates again, though.
Q. Oh, you think it isn't—
A. (interrupting) It does not retain it, unless it is enclosed in some vessel.
Q. So, then, your experience and understanding is, that this gas, put into the flour, evaporates itself out of the flour. Is that it?

Mr. Elliott: Well, I think I will object to this. This gentleman is not a chemist and he doesn't know anything about that.

A. You are asking me something, there, that is more than you ought to ask.

By Mr. Butler:
Q. Maybe it is, but I would like to know whether you have noticed whether the gas put into the flour evaporates out, as you have said.
A. Well, we have never detected the odor in the bleached flour.
Q. Then, you think the gas must come out of it?
A. If it has a peculiar odor, and it is retained, you surely would smell it.
Q. Now, are you sure about that?
A. Yes, sir, I am sure about that.
1635 Q. So, therefore, you know that the gas comes out, don't you?
A. I don't say I know it. I presume it does, because I don't detect it. But, if there is any smell in it at the mill, by the time we get it, if there is any gas odor, it is gone.
Q. We think some of it comes out, too. Did you ever make a loaf of bread from bleached flour, and a loaf from unbleached, and taste them at the same time?
A. That I cannot recollect. That I don't know.
Q. Can you tell the flavor of a particular bread, if you taste one sample today, and a sample of another tomorrow? Would you notice the difference, or would you have to taste them about the same time?
A. We examine all the bread we bake by the flavor, every morning.
Q. Now, from Mr. Larabee's mill, how much did you buy from Larabee?
A. Thousands of barrels. I could not tell you how many.
Q. Does he label his sacks "Bleached"?
A. Of late years, Mr. Larabee has been too high priced.
Q. What do you mean, "of late years"?

A. The last year or two, Mr. Larabee got better prices, elsewhere, and we could not compete in price.

Q. Does he label his bags "Bleached"?

A. Never did. Never was asked to do it.

Q. What brand of Larabee's did you buy?

A. I cannot remember the brand. It was their best and second best grade.

Q. But the best and second best grade of Mr. Larabee's flour from his mill at Hutchinson, Kansas, has become so high, in price, that you have to find a cheaper flour?

A. Oh, no. No, Mr. Larabee has a demand for that business, and it is due to his representative. We never dealt direct with Mr. Larabee.

Q. It is true you quit buying from Larabee, because his prices for his best and second best grade were too high?

A. We could not meet that price, against his competitors.

Q. That is what I say. His prices were too high?

1636 A. The difference was not worth while. It all depended. If it is just as good flour, and there is a difference of five cents, we consider quality, and give the other man the order.

Q. That is what I say, Mr. Boettler. Mr. Larabee's prices for his best and second best were too high, so you bought flour that you could get cheaper?

A. Well, now, what are you trying to get at? What you are thinking, is, that it was because it was bleached. If a man has flour of like quality, and the other man has the same thing, and one asks a little more money, he is not going to sell it.

Q. You could buy better flour than Larabee's for less money?

A. No. I would not say better, but of like quality.

Q. Then, you could buy the same quality of flour as Larabee's for less. Is that it?

A. That is a question that all depends upon how and when we might meet in the market. We may be on the market, about five cents higher and the other man selling it for a few cents lower, we would get it from him.

Q. Why did you quit Larabee?

A. Because his representative offered us other flour.

Q. Offered you other flour? What other flour?

A. From other mills.

Q. From other mills? A. Yes.

Q. For less money than he would offer Larabee's?

A. At times, when he would give us quotations.

Q. Now, what mills were they?

A. Oh, I could not recall all of them. We buy from different ones. We do not discriminate among mills, so long as we got the quality.

Q. So, the reason you quit Larabee, is not because you could get better flour for less money? A. No, sir.

Q. Or because you could get just as good flour?

A. No, sir. It is conditions.

Q. Did you quit buying from Larabee, to make money, or to lose it?

Mr. Scarritt: We object to that.

A. That is his suggesting that we buy. To make money.

1637 Mr. Scarritt: That is what we are all here for—to make money.

Direct Examination

By Mr. Elliott:

Q. How many loaves of bread does your company put out in a month, do you know?

A. As far as I can remember, about fifty million.

Q. About fifty million?

A. In the neighborhood of forty-six to fifty million. That varies, of course.

By Mr. Scarritt:

Q. A month? A. A month, yes, sir.

By Mr. Elliott:

Q. You yourself, have a bakery, too, haven't you, Mr. Boettler? A. Yes, sir. I have charge of one.

Q. What is the capacity of your bakery?

A. Its capacity is about one hundred seventy-five barrels of flour a day.

Q. How many loaves a day would that be?

A. Now, you are asking me figures—my memory don't serve me so well on figures. You will have to excuse me.

Recross Examination

By Mr. Butler:

Q. How many gallons of liquid eggs do you use, daily?

A. We don't use any, any more.

Q. When you used them?

Mr. Scarritt: We object to that as immaterial.

A. You would have to go and get statistics, when we use seven plants. You are asking me more than I can answer you.

Q. How many did you contract for?

Mr. Scarritt: We object to that.

Mr. Butler: I want to get the volume of his business.

Mr. Scarritt: I don't see that that has anything to do with the case. He doesn't use them now, he says, at all. Discarded them, some time ago.

1638 Mr. Butler: He does not use Larabee's flour, now, either.

Mr. Scarritt: Yes, he does.

The Witness: We will buy it tomorrow, if he gives us the right price.

Mr. Scarritt: And that is not the best evidence. If there is a written contract, as Mr. Butler spoke about, that is the best evidence.

Mr. Butler: Not for cross-examination.

The Court: Oh, call another witness.

Witness excused.

F. S. Hohengarten, called as a witness on behalf of the claimants, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Elliott:

Q. What is your name? A. F. S. Hohengarten.

Q. Where do you live, Mr. Hohengarten? A. St. Louis.

Q. What is your business?

A. Baker; Manager of a branch bakery.

Q. How long have you been engaged in that business?

A. Twenty-two years and a half, for myself.

Q. What is the capacity of your bakery? First, in the amount of flour you use, and then if you can give it, the approximent number of loaves of bread per day, or week, or month? A. Of our branch, or the whole company?

Q. No, your particular bakery.

A. We use probably from 40 to 50 barrels per day.

1639 Q. And how many loaves per month? Would you have any idea?

A. No, I could not tell that. It is not all made into bread; it is made into rolls or different varieties.

Q. Mr. Hohengarten, have you, in your bakery, dealt with bleached and unbleached flours? A. I have.

Q. I will ask you if you have even noticed any difference in the odor of bleached and unbleached flours?

A. I have not.

Q. Have you also made bread from bleached and unbleached flours? A. We have.

Q. I will ask you if you have ever noticed any difference in the taste or smell of bread made from unbleached flour, as compared with bread made from bleached flour?

A. None whatever.

Q. I will ask you, as compared with the unbleached flour, if you have ever noticed that the baking quality and strength, and so forth, of the bleached flour was inferior to that of unbleached flour? A. It was not.

Q. What is your opinion as to how bleached flour compares with naturally aged flour, in respect to its working qualities and strength, and baking qualities, and so on?

A. At early states of the new crop, the bakers prefer the flour bleached, making it the same as the aged flour. Formerly, we had to wait a certain period, before we could get to the new flour, using it, until it was through a period of sweat, as we called it.

Q. Now, have you ever noticed any difference in loaf volume, between bleached and unbleached flours? A. No, sir.

Cross-Examination

By Mr. Butler:

Q. You have told Mr. Elliott, in substance, as I understand you, that there is no difference between bleached and unbleached flour, in loaf volume, color, odor or taste.

1640 Mr. Scarritt: He has not said there was no difference in color.

A. Color? I believe it was excluded.

By Mr. Butler:

Q. No difference, then in the loaf volume, odor or taste. I will ask you, now, about the color.

A. In the baked bread? The baked loaf, or the flour?

Q. The flour.

A. Well, the bleached flour, as a rule, is a white flour—pale color.

Q. Whiter than the unbleached?

A. Yes, sir, at times.

Q. How about the loaf? Any difference in color of a loaf made from bleached and unbleached? A. Not much.

Q. They bake about the same, anyway, do they? Come out about the same, after you get through baking?

A. After it gets through baking, the yellow flour will bake out creamy, or white.

Q. The yellow flour will bake out white? A. Yes.

Q. So, then, it is not for the color of the flour that you want it bleached, at all, because the yellow flour bakes out white, as I understand it?

A. Probably not as white as bleached flour, but to some extent. White enough to be marketable.

Q. And it is only for the advantage to the new crop, then, as I understand it.

A. As we bakers understand it, yes.

Q. So, from baking standpoint, there is no need of bleaching, if the flour be made from the old crop, is there?

A. No.

Q. Now, Mr. Hohengarten, you have spoken of the taste or flavor of breads. I suppose the way bread is made affects the flavor, does it?

A. Considerable.

Q. You use other substances in bread—yeast, sugar, sometimes, and salt, I suppose? A. Malt.

1641 Q. Malt? What else? A. Lard.

Q. Malt and lard?

A. And sugar and yeast and flour and water.

Q. Sugar, and yeast, and flour, and salt?

Mr. Scarritt: And water.

By Mr. Butler:

Q. And malt, too? A. Yes, sir.

The Court: Alum.

A. No, sir.

Q. Now, malt, lard, sugar, salt, water, yeast, flour, and salt? A. That is all.

The Court: No baking powder?

A. No, sir.

By Mr. Butler:

Q. Now, this is bread we are speaking of? A. Yes.

Q. Now, we will mark that "bread" at the top of my list, here. Now, biscuits. Do you make biscuits?

A. No, sir.

Q. You make cake? A. We do.

Q. Now, you have told Mr. Elliott you never noticed that bleached flour was inferior in any way. Now, that would entitle us to inquire about cake, perhaps. Flour is used to make cake, I suppose? A. It is.

Q. Now, what do you use to make cake? A. Soft flour.

The Court: What?

A. Soft flour.

By Mr. Butler:

Q. Now, what else?

A. Well, other ingredients, owing to the kind of cake we make.

Q. Tell me the kind of ingredients that are used in the cake that is most sold. I don't want to go into the different kinds of cake.

A. Well, the main substance of a cake is sugar—

The Court: What kind of sugar—white or brown?

1642 A. That is according to the cake we make. Some we use brown sugar and others we use white sugar, according to the class of cake we make.

By Mr. Butler:

Q. Sugar? A. Butter or lard.

Q. Or both? A. Or, both, yes.

Q. Butter, or lard, or both?

A. Eggs, and milk, and flour.

Q. Eggs, milk and flour.

The Court: What kind of milk? Fresh or buttermilk?

A. Fresh milk.

By Mr. Butler:

Q. Now, how do you tell your bleached from your unbleached flour?

A. Well, we don't look for it. We used a bleached flour the same as we would an unbleached flour.

Q. I know, but you have told Mr. Elliott you have not been able to observe any difference between the bleached and unbleached. Now, you could not answer that question without having known that some flour was not bleached, and some flour was bleached, and I want to find out how you can tell.

A. Well, as I said, we used a bleached flour the same as we would an unbleached flour.

Q. You do not get all bleached, do you?

A. Mostly, I think.

Q. You think mostly? A. Well—

Q. (interrupting) Well, don't you ever get any flour that is not bleached, down there? A. Why sure we do.

Q. How can you tell which is which?

A. We don't go into that detail, because it is not necessary for a baker to know. Whether it is bleached, or unbleached, the action on them is the same, in baking.

The Court: Is what?

A. The action on them, the bleached and the unbleached, is the same.

1643 Q. Does all the flour that you get down there act the same? A. No, indeed not.

Q. A short patent is the best stuff, isn't it—the best flour?

A. Not always.

Q. What kind of flour is the best?
A. Well, that all depends on what a baker considers the best.
Q. Well, I am asking you, because you are the baker.
A. A short patent flour.
Q. So that you have flours that act differently? I am not going into details, or bother you long about this matter, but here is what I am trying to get at: You get flour from a good many different mills? A. We do.
Q. And the flours do not act exactly alike, do they?
A. No.
Q. Maybe from the same mill it would act differently, and maybe two different mills would act alike, and so on, and maybe they would act differently, and so on. Isn't that true?
A. Yes.
Q. If you have a good flour, and handle it right, you can make good bread and cake out of it, if it is any good?
A. Sure we can.
Q. That is what you are there for, isn't it?
A. Yes, sir.
Q. Now, what I am trying to get at is this: How do you know that you have bleached flour, at all? How can you tell the flour? Can you tell it by looking at it?
A. No. I am not an expert on flour.
Q. Can you tell it by tasting it? A. No.
Q. Can you tell it by smelling it?
A. You want to know how I know when we have it?
Q. Yes.
A. I am down at headquarters, usually, and hear any conversation about flour, and when flour is brought for our branches, I know whether it is bleached or unbleached.
Q. You know by what somebody else tells you? A. Yes.
Q. Or what you hear somebody say? But what I am
1644 trying to get at is this: The flour is not branded "bleached" is it? A. Not as I know of.
Q. Some of it is branded "unbleached", perhaps?
A. No, sir.
Q. None that you buy? A. I haven't even noticed that.
Q. Now, from the handling of the flour, can you tell whether it is from the new wheat or the old wheat? A. Yes.
Q. Well, if it is bleached, I mean—if it is bleached, from the wheat, can you tell then that it is different from the old wheat? A. No. Can't tell it.
Q. So that, by handling flour, or tasting it, or smelling it, or looking at it, you cannot tell whether it is bleached or not, can you? A. Cannot, no, sir.
Q. So, you have said to Mr. Elliott that you have never noticed any difference? A. I have not.

Q. At all? But you think it does help the new crop?
A. The new crop.
Q. You are not a practical miller? A. Not at all.
Q. You don't know how it goes, when they work a part of the old crop in with the new crop, at the mill?
A. No, sir, I don't understand that.
Q. And you have never seen any of these bleachers working? A. I have not.
Q. You are not familiar with that? A. No, sir.
Q. All you go by, is that you have never noticed any difference? You cannot tell one flour from the other, by smelling it, tasting it, or anything else, can you?
A. We can tell it in the baking test. Not as to the bleached and unbleached. I mean as to quality.
Q. You do not believe that bleaching will change a poor flour and make a good flour out of it?
A. No, the baker would soon discover it.
Q. Yes? The Lord has not done that yet? Now, about this taste. Is the flavor of bread an important thing?
1645 A. Yes, sir.
Q. And of cake, an important thing?
A. Indeed it is.
Q. Now, have you had any means of comparing the flavor of bread made from bleached flour, with that of unbleached flour, so you had one loaf that you knew was bleached, and one that you knew was the same kind of flour that was not bleached?
A. We have never made any such comparisons.
Q. You are just testifying from your own general impression? A. Yes.
Q. Now, don't you think the malt, and lard, and sugar, and salt, and yeast might affect the taste?
A. Decidedly so.
Q. Now, flour itself, if it is clean flour, does not have much taste, does it,—the pure flour?
A. It has a wheat taste—a flour taste.
Q. But it is not a strong taste? A. No.
Q. Distinctly a mild taste? But malt has a taste, has it?
A. Well, yes, it has.
Q. Lard has a taste? A. Yes.
Q. Sugar has a taste? A. Yes.
Q. Salt has a taste? A. Yes.
Q. Yeast has a taste? A. Yes.
Q. And those are the controlling things, then, in bread, as to the taste, are they not?
A. That is what they are.
Q. That is what they are? A. Properly proportioned.
Q. If you would get in too much lard, it would spoil the taste? A. Yes.

Q. Too much sugar would spoil it? A. Yes.
Q. Too much salt would spoil it? A. Yes.
Q. Too much malt would spoil it? A. Yes.
Q. Now, that is so as to the bread. Now, as to the cake. Did you ever make a cake out of bleached flour, and then another cake out of unbleached flour?
1646 A. We haven't made the comparison.
Q. The sugar, and the butter, and the lard, and the eggs, affect the taste of the cake, don't they?
A. Very much so. More so than bread.
Q. Now, with respect to cake, eggs are used? Isn't that true? A. Yes, sir.
Q. And if you put in too many eggs, that would affect the taste? A. Yes, sir.
Q. And make a cake out of bran taste the same as cake made out of flour, very near it? It would destroy the flour flavor, is what I am trying to get at, of two different kinds of flour?
A. If you will allow me,—flour is a minor article in a cake. Cake is composed more of other substances.
Q. Now, if there was bad eggs put into cake, it will spoil the taste? A. Yes, it will.
Q. Do you use liquid eggs, too? A. We have used them.
Q. To what extent? Are you associated with the last witness? A. Yes, sir.
Q. From the same concern, are you?
A. Same concern, but different branch.
Q. Now, you are the same gentleman he paused in his testimony, to inquire about the weight of these eggs?
A. Yes, sir.
Q. How many of those eggs are used in your establishment?
A. None used at present.
Q. I mean that you used before you stopped.
A. Hard to tell. We used probably four or five cans per week.
Q. In the bakery you are with? A. Yes.
Q. How many bakeries are there, altogether? A. Seven.
Q. Is yours the largest?
A. No, sir; ours is one of the smallest.
1647 Q. What is the capacity of the seven?
A. That I could not tell you, off hand.
Q. Would the seven be ten times as much as yours? You have seven, altogether, and you say that yours in the smallest?
A. Yes.
Q. Now, seven altogether, would they be ten times as large as the one you are in?
A. You mean in cake production?
Q. Yes. A. No, they would not.

Q. Seven times as large?
A. We probably make more cakes, in our small plant, than the largest plant.
Q. What proportion of the total production of cakes is made at your place—the branch that makes the cakes?
A. I could not say.
Q. About one-tenth, or one-fifth, or one-quarter?
A. We will say about one-tenth of it.
Q. And at your place, there were four cases of 44 pounds each? A. 44 pounds per can.
Q. 156 pounds of the liquid eggs, per week?
A. Yes, sir.
Q. Now, don't you think that 156 pounds of liquid eggs, preserved—by the way, do you know they were preserved?
A. No.

The Court: What are those eggs made of?

A. They are fresh shell eggs, broke in, and kept in preservative, and put in cold storage.

By Mr. Butler:
Q. You did not see them broke in?
A. No. We presume they are. We are told so by reputable houses, that are making them.
Q. What?
A. Respectable houses—reputable houses were making them.

By Mr. Butler:
Q. Might have been hatchings, for all you know?
A. Could not put them in.
1648 Q. What preservative did they use?
A. I do not know; I am not a chemist.
Q. Well, I know, but were you using 156 pounds of liquid eggs a day, without knowing what was in them?
A. I suppose so.
Q. Well, now, what I am trying to get at is this: Don't you think that 156 pounds of liquid eggs would be more influential on the taste of your cake, than the flour would be?
A. I don't think so.
Q. You think not?
A. You mean on the taste of the cake?
Q. Yes; don't the eggs affect the taste very much?
A. Oh, they do.
Q. Don't you think, between these liquid eggs, and the sugar, and the butter, and the lard, and the milk, that the taste of flour would be drowned out, so you could not tell whether it was a good flour, or just a poor flour?

Mr. Scarritt: I object to this line of examination going any further, if your Honor please, as being absolutely immaterial to the issues in this case.

Mr. Butler: I was about through, if it please the Court.

The Court: Yes, he has a right to inquire.

Mr. Scarritt: We save an exception.

Mr. Butler: I think it is material, because he said there was no difference between the bleached and unbleached. Now, if the eggs drowned out the taste—

Mr. Scarritt: (Interrupting): Don't argue, because you have got your ruling.

Mr. Butler: I wanted to be sure you understood it.

Mr. Scarritt: It don't make any difference whether I understand it or not.

By Mr. Butler:

Q. Don't you think that is true, that the lard and the eggs and the milk, butter, and sugar, would probably drown out the taste of the flour in the cake? In other words, you could not taste the cake and tell what kind of flour it was made out of?

1649 A. No. You cannot tell what kind of flour you use in a cake. It is impossible.

Q. Now, with the bread. Don't you think the malt, lard, sugar, salt, and yeast, would have a strong influence on the taste? A. Indeed, yes, sir.

Q. And so that would make it very difficult, indeed, would it not, to identify any flour, bleached or unbleached, or whether it was a patent flour, or a clear, baker's grade of flour, by the taste, wouldn't it?

A. There is a peculiar difference between a clear and a patent flour. You could detect that in the bread baking.

Q. Well, I know that you could detect it in the loaf, itself. A. Yes.

Q. But I am speaking now, Mr. Hohengarten, of the taste. Supposing neither is bleached; suppose there is no bleaching at all, now, and you have a good, high grade patent, and you have a good, fair clear—not a rotten clear, or low grade, you know, but a fair clear. What I am trying to get at is this: Would there be any difference in the flavor of the bread made as you make it, there? A. I think it would.

Q. Now, in the taste, you think there would be a difference? A. Yes.

Q. Now, do you suppose you could tell the difference in the taste of the flour made from one kind of wheat, from flour made from any other kind, if it was not bleached? A. No.

Q. You do not think anybody could do that, if they used malt, sugar, salt, yeast and flour; is that right?
A. That is right.
Q. Do you make crackers? A. We do not.
Q. Do you make anything using baking powder?
A. We use cream of tarter baking powders.
Q. What things do you put that in? A. Cakes.
1650 Q. Well, you did not give me that. A. Rising stuff.
Q. Cream of tarter? A. Yes.
Q. Anything else? A. Soda.
Q. Anything else? A. That is all.
Q. Where do you get your cream of tarter?
A. From the supply house.
Q. And your soda? A. Same house.

Redirect Examination

By Mr. Scarritt:
Q. Do you use all those things in all kinds of cakes?
A. They differ very much, in the grade of cake made.
Q. You have given him about all that you put in all kinds of cakes? A. Yes, different proportions.

By Mr. Butler:
Q. You gave me, first, what you put in your principal cakes—sugar, butter, milk, and so forth?
A. All cakes are composed of that.
Q. In every cake?
A. In every cake, but used in different proportions.

Dedirect Examination.

By Mr. Elliott:
Q. I just want to ask you, Mr. Hohengarten—I am not going to run all through this cake business and the ingredients, but just assume you had an unsound flour, and you should put all of this stuff that we have had here, the ingredients, in it, would that make that a cake or a loaf of bread from such unsound flour—would that make it taste like a loaf of bread made from the pure, sweet flour? A. It would not.

By Mr. Butler:
Q. You cannot bleach it so it will, either, can you?
A. No, sir.

1651 Witness Excused.

Mr. Elliott: If your Honor please, Mr. Boettler wants to correct his testimony; he made a mis-statement.

Adolf Boettler, resuming the stand stated as follows:

The Witness: I made a mistake in reference to my output. I meant annually, instead of monthly.

By Mr. Butler:

Q. Have you ever been told what preservatives are used in this liquid eggs?

A. Yes, I have, but I don't remember what it was. The Government Inspector told us, and that is what caused us to abandon it, but I do not remember what it was.

Q. That is, the Pure Food Inspector told you?

A. Yes, sir.

The Court: Was it formaldehyde?

A. No, I think it was something else.

By Mr. Butler:

Q. Was it borate or boracic acid?

A. Yes, boracic acid, and he told us it was used in such quantity—but nevertheless, they did not stop the man that we had bought it from.

Witness Excused.

C. H. Colladay, called as a witness on behalf of claimants, being first duly sworn, testified as follows:

Direct Examination

1652 By Mr. Elliott:

Q. Mr. Colladay, state your full name.

A. C. H. Colladay.

Q. What is your residence? A. Abilene, Kansas.

Q. What is your occupation? A. Mill Manager.

Q. What mill? A. Security Flour Mills Company.

Q. Manager of the Security Flour Mills Company, of Abilene, Kansas. A. Yes, sir.

Q. Do you use an Alsop bleacher in that mill?

A. Yes, sir.

Q. How long have you been using it?

A. Since the construction of the mill, two years ago.

Q. Since two years, when the mill was constructed?

A. It will be two years in July.

Q. Have you made any alterations or change in the pipings of that, since you installed it? A. No, sir.

Q. What grades of flour do you make?

A. We make a 65 per cent patent, and a 95 per cent patent, and a clear.

Q. How do you brand these grades?

A. We sell them under a name. We do not brand them as to percentage, at all.

Mr. Scarritt: You do not brand them "patent"?

A. We do not brand them "patent".

The Court: Sir?

A. We do not brand them anything, just sell them under some name.

The Court: Under a fanciful name?

A. Yes.

By Mr. Scarritt:

Q. Do you put "patent" on?

A. No, sir, we don't put "patent" on any.

The Court: Just some fanciful name you have selected?

A. Under our own trade mark.

By Mr. Elliott:

Q. Now, what grades of flour do you bleach?

A. We bleach our patent, and we bleach our 95 per cent.

The Court: Bleach your short patent?

1653 Mr. Butler: 65 per cent?

A. We bleach our 65 per cent, and our 95 percent, and we bleach the clear, if our customers want it.

By Mr. Elliott:

Q. Otherwise, you do not bleach it?

A. Otherwise we don't bleach it.

Mr. Butler: Mr. Elliott, he said if their customers wanted it bleached. Would that apply to the clear, or to all?

Mr. Elliott: Just the clear. He bleaches that, if the customers want him to.

By Mr. Elliott:

Q. I will ask you, suppose you take a sack of bleached flour, right off the packer, is there any odor, in such flour, that is foreign to it, that you are able to detect? A. No, sir.

Q. It is right off the packer, and you say there is no odor, foreign to the flour, that you can detect? A. No, sir.

Q. Explain what a packer is.

A. A packer is a machine used to draw the flour down out of the bins, and force it into the sack, under pressure, so you could get a sufficient quantity of flour in the standard sack.

Q. Right out of the bin?

A. Right out of the bin, yes, sir.

The Court: 50 pounds, or whatever the sack calls for?

A. Yes, sir.

By Mr. Elliott:

Q. I will ask you what effect, if any, as to quality and strength have you noted, as being produced in flour by bleaching it?

A. The bleaching ages flour, and does not affect the quality or strength, at all.

Q. Did you ever have any flour sold in the last two years, rejected?

Mr. Butler: Objected to as irrelevant.

The Court: That might or might not be material.

1654 By Mr. Elliott:

Q. And if so, what kind of flour?

Mr. Butler: I will object to that. His flour is not at issue here.

The Court: Oh, he may answer. We won't go into that very far, Mr. Elliott.

A. We have had one case of that kind, and it was unbleached flour.

By Mr. Elliott:

Q. Do you sell to the family trade? A. We do.

Q. Do you use bleached flour in your own family?

A. We do.

Q. Somebody stated here, that the yellow color of flour was not an impurity. I will ask you if you regard the yellow color of flour as a defect? A. I do.

Cross-Examination

By Mr. Butler:

Q. Is it an impurity? A. I don't consider it so.

Q. Why, if it is a defect?

A. I regard it as a defect, because it is a color that the customer does not want.

Mr. Butler: I move to strike out "because" part of it.

Mr. Elliott: I object to having that part stricken out.

Mr. Butler: Of course, I knew you would, but I made the motion, just the same.

The Court: The last part of it may be stricken out.

By Mr. Butler:

Q. Now, do you think the Lord made a mistake, when he put yellow coloring matter into wheat?

Mr. Scarritt: I object to that. I do not think we can get the Lord here to contradict anything that was said.

A Juror: Can't cross-examine him.

Q. Do you think it has an effect? A. I do.

Q. Do you think it injures the quality of the flour?

A. Injures the color.

1655 Q. Do you think it injures the quality of the flour?

A. It does, in color.

Q. Do you think it injures the quality of the flour?

A. I cannot change my answer to you.

Q. Is there anything about my question you do not understand, Mr. Colladay? A. Yes. I do not understand it.

Q. What is it? My question is this: Do you think the natural color of flour injures its quality? What is it about that question that is hard for you to understand?

A. Well, I don't see, aside from the color, what it has to do with the quality.

Q. Well, is that the reason you do not understand the question? A. Yes, sir.

Q. Well, now, does it injure the quality of the flour in any respect? Suppose I like the yellowberry?

A. I will give you yellow flour, if you want it.

Q. Yes? How much will you give? I will give you my address, if you will send it on.

A. I might send you up a sack.

Q. Yes? I thought you would cut it down. Can't you distinguish between quality of flour, and the color of it? When I ask you if the yellow color injures quality, you keep insisting that you do not understand my question. Now, can't you as a miller, distinguish between the quality of flour and its color, or, are you trying to avoid answering a very simple question?

Mr. Helm: Which one of those questions do you want answered, Mr. Butler?

Mr. Butler: I will ask the Court to direct counsel to keep still.

The Court: Go on, Mr. Witness, and answer his question.

A. I consider that the quality and color are two parts—I mean two distinct parts.

1656 By Mr. Butler:

Q. The quality is one thing, and color is another?

A. Yes, sir.

Q. Now, then, I ask you if the natural color injures the quality—if the one thing injures the other. Now, that ought to be very plain. A. No, I don't think it is.

Q. You never heard anybody that did, did you? In your whole experience in the mill, did you ever hear anybody claim that color affected the quality of flour?

A. We have lots of them that insist that they want white flour.

Mr. Butler: I move to strike that out.

The Court: Yes. That is not an answer.

By Mr. Butler:

Q. The natural color injures quality? Did you ever hear that promoted by any living person?

Mr. Scarritt: We object to that because he has not said that it did. The gentleman is leading him away from the proposition.

Mr. Butler: Well, I will withdraw it.

Q. Do you smell the bleaching gas about your mill, when the Alsop bleacher is working?

A. We smell it at the flour bins.

Q. Do you smell it in the office? A. No, sir.

Q. Do you smell it at the gas factory—the gas machine—nitric acid machine? A. No, sir.

Q. Do you smell it anywhere, except in the flour bins?

A. No, sir.

Q. Then I take it that your system is tight throughout, from the flaming arc to the flour bin, so that gas cannot escape; is that true? A. I believe it is.

Q. Did you ever take some flour that was not touched or influenced by this bleaching gas, and put it in a bag,
1657 and compare its odor with a bag of freshly bleached flour? A. Yes, sir.

Q. When? A. Well, I could not give you the dates.

Q. About when?

A. Oh, I have done that several times, since I have been engaged in the business.

Q. When, first? What year? A. 1909.

Q. Why? A. Curiosity.

Q. To find out whether the smell was affected?

A. Yes, sir.

Q. How many horse power dynamo do you keep?

A. I could not tell you.

Q. Are you a practical miller? A. No, sir.

Q. Have you a practical miller? A. Yes, sir.

Q. Who would have the opportunity, in the course of his work, to know the details of manufacturing flour in that mill?

A. Yes, sir.

Q. Is he still with you? A. Yes, sir.

Q. Been with you all the time?

A. No, sir—yes, he has. I will take that back.

Q. Do you know he never caused the pipes to be cleaned out?

A. I don't believe they have been cleaned out in two years.

Q. Would you know if they had?

A. Yes, I think I would.
Q. Have you one of these slicker-downs in your pocket?
A. No, sir.
Q. Every miller carries one of them, doesn't he?
A. I am not a miller.
Q. Then, I guess there isn't much use examining you. Did you come up here to testify about your mill?
A. I am an office man.
Q. You are the office man, and you came here all the way from Abilene to Kansas City, to testify in this case?
A. Yes, sir.
Q. To tell about the Alsop process? And you don't know how many horse-power of current is used to make the gas, or bleach the flour? A. No, sir.
1658 Q. Do you know how many barrels of flour you make? A. Yes, sir.
Q. How many? A. 600.
Q. Every day? A. Twenty four hours.
Q. That is your capacity, or your output?
A. That is our output.
Q. 600, every twenty-four hours? Do you know how many bleachers you have? A. One.
Q. Do you know how many aparkers, or electrifiers there are, to that bleacher?
A. Well, as to the details of the machine, I am not familiar with it.
Q. Do you know how many agitators there are?
A. Yes, sir.
Q. How many? A. Two.
Q. Two agitators? What percentage of clear do you bleach?
A. 35 per cent.
Q. Does it hurt it? A. I don't think so.
Q. Does it improve it? A. Improves the color.
Q. In any other respect? A. No; ages it.
Q. What is "aging it"? I have been trying to find out. You told Mr. Elliott that bleaching ages the flour, but does not affect it as to quality or strength. Did I understand you right? A. Yes, sir.
Q. All right. Now, what is aging, if it does not affect quality or strength?
A. After bleaching—
Q. (interrupting) No, I am not speaking of the bleaching, Mr. Colladay? I did not make myself clear, and it was my fault. What is natural aging.
A. Natural aging is simply the time which elapses between the grinding of the flour and the use of it.
Q. So, aging is time? A. Yes, sir.
Q. So, natural aging—we will call it three months' time?

A. Well, that might do.
Q. Is that it?
A. That might do, yes, sir.
Q. But the quality and strength is not affected by the time, is that it? A. Yes, sir.
1659 Q. Now, artificial aging, or bleaching, is aging?
A. Yes, sir.
Q. So, therefore, bleaching is three months' time?
A. Has that effect.
Q. What effect has three months' time? You said nothing but lapse of time?
A. Well, the flour this is three months old will give better results in baking than flour unbleached, right from the packer.
Q. Oh, then natural aging does effect quality and strength?
A. Not the strength.
Q. It affects quality, then? Does it?—or do you know? Does that come in the office department?

(No response.)

Mr. Lyons: I did not get your answer.

A. Will you kindly repeat your question?

By Mr. Butler:
Q. Do you know whether natural aging affects quality?

Mr. Helm: Of the flour?

A. Yes, I believe it does.

By Mr. Butler:
Q. Favorably or unfavorable? A. Favorably.
Q. How?
A. Well, it will produce—it will give better baking results.
Q. There seems to take place a chemical change, does there not, in good flour, by the lapse of time, improving for a period, if it is stored under proper conditions, and as time goes on, that flour will begin to retrograde, in the course of a long period of time, and finally become worthless; is that not true?
A. I never kept any flour on hand long enough to find out about that.
Q. You do not know, then? Does bleached flour improve with the lapse of time, after bleaching?
A. I could not say.
Q. Now, the truth, therefore, is that you do not feel that you are a flour or milling expert? Isn't that true?
1660 A. I feel that I am thru the experience in the office, the results obtained from our customers.
Q. But I do not mean what your customers think, but what you know yourself. Do you think your observations of

the flour, and of the milling process, are such as to enable you to give us any information that will be of real value in this investigation?

A. Yes, sir, I do.

Q. Now, you don't know whether flour that is not bleached, spoils in the lapse of time, do you?

A. I only know it from what I have read about it.

Q. You understand that is true? A. Yes.

Q. But, your experience as a miller does not give you any help?

A. I said we do not carry flour that length of time.

Q. You do not know whether flour that has been bleached spoils with the lapse of time, or not, do you?

A. Not from personal experience.

Q. Well, you have never read about it, have you?

A. Yes, sir.

Q. What does the reading say?

A. That it does.

Q. Do you know whether it improves with the lapse of time? A. Up to a certain extent.

Q. After bleaching?

Mr. Scarritt: That is what you are asking him about.

Mr. Butler: Well, I wanted to be sure we understood each other, Judge Scarritt. I am seeking to be perfectly fair.

Q. After bleaching, for a certain time, it improves?

A. Yes, sir.

Q. Now, as to the rate of improvement, compared with the unbleached, afterward—to make myself clear.

A. Pardon me. I misunderstood you.

Q. Yes?

A. I understood you to ask me the question, if the unbleached flour improved with lapse of time.

Q. And you said it did? A. Yes.

Q. I asked you it the bleached flour improves with the lapse of time, and you said it did. Would you like to change that. If you want to change it, change it.

1661 A. I want to change that.

Q. You would like to change that?

A. Bleaching accomplishes the same effect that the lapse of time does.

Q. Who told you that?

A. Well, I know that from personal experience.

Q. Well, now, what experience did you have that teaches you that? A. We have had the flour on hand.

Q. When was this—the two kinds? A. Yes, sir.

Q. Side by side? A. Yes, sir.
Q. What is that?
A. We had the unbleached flour in the warehouse for a period of three months, and sent that flour out, and did not give any better satisfaction than bleached flour will, right from the packer.
Q. Now, you are talking about the satisfaction of somebody. Did you, yourself, ever make any experiments? By the way, are you interested in this mill that is defending this case? A. No, sir.
Q. Are you interested in the defense of this case?
A. To what extent?
Q. I don't know. I am asking you.
A. No, I am not interested in it.
Q. Are you aiding, the defense of this case, financially, or expect to, you or your company? Can't you remember?

Mr. Scarritt: If you know, just tell him.

Mr. Helm: Certainly.

A. Yes, sir, I subscribed to the defense of this case.

By Mr. Butler:
Q. Why didn't you tell us that before Judge Scarritt asked you to?

Mr. Scarritt: You can see the reason why.

Mr. Helm: He did not just know what you wanted.

By Mr. Butler:
Q. Did you forget it, until reminded by Judge Scarritt to tell us? A. (No response)
1662 Q. Did you ever, in the last two years, since you have been bleaching, brand your flour "Patent" flour?
A. Yes, sir.
Q. When? A. In 1909.
Q. "Silver Leaf Patent"? A. Yes, sir.
Q. Since then, you have taken it off? A. Yes, sir.
Q. To avoid having it charged against you that it was misbranded?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial in this case, and having nothing to do with the issues of this case.

The Court: He may answer.

Mr. Scarritt: We except.

By Mr. Butler:
Q. That was a ninety-eight per cent patent, wasn't it?

A. Ninety-five to ninety-eight.

Q. Ninety-five to ninety-eight per cent patent? Do you make a straight?

A. We do not make it in any longer percentage than—

Q. (interrupting) The ninety-eight?

A. Ninety-five or ninety-eight, out of the present run.

Q. So, in 1909, you were accustomed to make a flour, the ninety-eight per cent—ninety five to ninety-eight per cent of all the flour content of the wheat. Now, when you make it ninety-eight per cent, what did you do with the other two per cent? Was that a clear or a low grade?

A. It was a low grade, put in the feed.

Q. Now, a straight flour is all of the flour, except the low grade, is it not? A. Yes, sir.

Q. So, then, this ninety-eight per cent, or ninety-five per cent, as the case may be, was all of the flour except the low grade, was it not? A. Yes, sir.

Q. It was, therefore, a straight flour, within your definition of that term, just now, was it?

A. No, sir. The low grade is considered a flour.

Q. Well, you told me that a straight flour was all of the flour, except the low grade. Do you want to change
1663 that? A. Yes, sir.

Q. How do you want to change that?

A. The straight flour would include the low grade.

Q. So that, if you put in this two to five per cent that you put in the feed, then it would be a straight flour?

A. It would be a full straight, yes, sir.

Q. Now, did you bleach this ninety-eight per cent flour?

A. It would depend on what our customers wanted.

Q. Well, I mean generally. A. Generally, we did.

Q. Generally you did, and that was your "Silver Leaf Patent"? A. Yes, sir.

Q. And so branded? Was it branded "Bleached".

A. In Kansas.

Q. In interstate commerce? A. No, sir.

Q. The law of Kansas, or the order of its health department, requires flour sold in Kansas that is bleached, to be branded "Bleached", does it not? A. Yes, sir.

Q. So, the health department of Kansas requires bleached flour to be labeled as bleached? A. Yes, sir.

Q. But, as soon as you sent it outside of Kansas, you left the label off? A. Yes, sir.

Q. Now, then, bleaching this flour, what was its color—this ninety-eight per cent flour, as compared with sixty-five per cent flour made out of the same wheat—same kind of wheat? Lighter or darker, or the same?

A. It would be slightly darker.

Q. Slightly darker? After you bleached the ninety-eight per cent patent, as you labeled it, how did the color then compare with the sixty five per cent that was not bleached?

A. It would not be the same.

Q. Would it be lighter or darker?

A. It would be lighter.

Q. It would be lighter? So that the bleaching process made the longer patent lighter colored than the natural unbleached, shorter patent? A. Yes, sir.

Q. When you bleached them both, which would be lighter? Did you ever notice that?

1664 A. The sixty-five per cent.

Q. So that the effect of this bleaching was to make the bleached, long patent, lighter than the unbleached short patent, wasn't it? A. Yes, sir.

Q. And it was to make the fresh flour, as light in color as the naturally aged flour, and therefore, look like it?

A. No, it won't look like it.

Q. It doesn't look like it? A. No.

Q. So, this bleaching doesn't make the flour look the same as the natural aging does? A. Not exactly.

Q. Not exactly? So, therefore, it is not exactly the same as natural aging, because, if it was the same, they would look the same, wouldn't they?

Mr. Elliott: Are you asking a question, or making a statement?

Mr. Butler: Please read the record.

(Record read as requested)

A. They won't look exactly the same.

By Mr. Butler:

Q. They don't look exactly the same? A. No, sir.

Q. Therefore, they are not the same, or they would look the same, wouldn't they—as an expert, now?

Mr. Elliott: He doesn't happen to be an expert.

The Court: Go on and answer.

A. I said no.

By Mr. Butler:

Q. So, the statement that you make, that bleaching was the same as natural aging, was inaccurate, wasn't it?

A. I stated it had the same effect as natural aging.

Q. Yes, the same general effect—made it lighter in color?

A. Yes.

Q. But not in degree?

Mr. Scarritt: Same in quality and strength.

1665 Mr. Butler: Wait a minute, Judge Scarritt. I will put you on, sure, if you try to help this witness.

The Court: Let us get along, Mr. Witness.

By Mr. Butler:

Q. The same in kind, but not in degree? That is what you mean, isn't it? A. Yes.

Q. You don't mean to say that any living human being can so adjust an Alsop bleacher on the varying kinds of flour that come down the spout, as to be the same as three weeks, or six weeks, or three months, or six months time, do you?

A. I think it will have the same effect in the baking process.

Q. Does it make any difference how hard they bleach it?

A. Well, we have never been able to bleach it hard enough to spoil it.

Q. Have you tried?

A. Yes, sir, all the machine will carry.

Q. Do you get the yellow color, xanthoproteic reaction, —the yellow poisonous action in the proteids?

A. I never noticed it.

Q. You never looked, did you? A. No, sir.

Q. Never took any pains to clean that out of your packing rooms, did you? A. I left that to the miller.

Q. Did you ever smell the gas in that room?

A. In the packing room?

Q. Yes. A. No, sir.

Q. Did you ever go in there when they were bleaching?

A. Yes, sir.

Q. Your packing room doesn't smell of bleaching gas?

A. Our packing room is below our bleacher.

Q. And your flour runs down? A. Yes, sir.

Mr. Scarritt: He is talking about another room.

1666 By Mr. Butler:

Q. Well, the bin where it goes out of the agitator, that is about six by six by ten in the Updyke Mill. I want to know whether you can smell the gas, while you are bleaching.

A. You can smell the gas, if you open up the door.

Q. Did you ever observe the yellow flour?

A. No, sir, I never did.

Q. Have you given any orders to have that cleaned out?

A. No, sir.

Q. Did you ever see any yellow flour around your mill, as the result of this bleaching, as yellow as sulphur? A. No, sir.

Q. And, no matter how hard you bleach, you cannot hurt it? And you say you have never been able to do it by bleaching?

A. No, sir.

Q. And you don't know how many horse-power you gave it? You could not hurt it? Couldn't turn it yellow, could you?

A. No, sir.

Q. Well, now, when you bleached it as hard as you could, to see whether you could hurt it or not, how much natural aging was that equivalent to? A. I could not tell you.

Q. Now, nobody else can either, can they?

A. I am sure I couldn't say.

Mr. Scarritt: I object to what anybody else can do.

Mr. Butler: I thought that is what you wanted him to tell. I thought that was what he came here for.

Redirect Examination

By Mr. Elliott:

Q. In respect to this smell. We have had so much about it, in the bin, I will ask you what is your judgment. Is that gas that comes down from the agitator with the flour, or is it gas that comes up from the flour in the bin?

A. In my opinion it is gas comes down out of the agitator with the flour.

1667 Q. Are those bins ordinarily closed?

A. Yes, tight.

Q. You were asked about branding your flour "Bleached", in the state of Kansas. I will ask you if you know of any federal rule which requires you to brand bleached flour as such. A. No, sir.

Q. Did you ever have any flour analyzed? A. Yes, sir.

Q. Where, and when, and with what result?

Mr. Butler: I will object to his result, as hearsay.

The Court: That may be hearsay.

A. We had it analyzed here at Kansas City, at the Southwestern Flour Laboratories.

By Mr. Elliott:

Q. Bleached and unbleached flours? A. Yes, sir.

Q. So, when you were giving Mr. Butler your reasons, I will ask you if they were based, in part, at least, upon the result of analysis that you had actually made. A. Yes, sir.

Mr. Butler: Then, I move to strike out his reasons, as based upon hearsay.

The Court: I am not going to strike it out, but you cannot get in here, by hearsay, on analysis by this Southwestern Company.

Mr. Elliott: I am not trying to do it. Just the fact.

The Court: Well, he said it was analyzed by this Southwestern Company, here in Kansas City.

Mr. Elliott: I did not ask him what the analysis was, and I am not going to.

The Court: Well, go on. Anything further?

Mr. Elliott: I think that is all.

Recross-Examination

By Mr. Butler:

Q. You say that the gas pours down with the flour?

A. No. I did not say it pours down.

Q. Comes down, falls down, slides down, and gets
1668 down with it. Is that it?

A. I said that in my opinion the gas came into the bin from the agitator with the flour.

Q. That is the only place it could get in, isn't it? So that the flour in that bin is exposed to gas, in there, all the time, isn't it? A. The flour don't stay in the whole bin.

Q. How long? That bin is six by ten, isn't it? How long does it stay in the bin?

A. On an average, I would imagine, about five minutes.

Q. So that all of your bleached flour is exposed to this gas about five minutes, instead of fifteen or twenty-one seconds, isn't it? Isn't it? A. No, not all of it.

Q. The bin is full of gas, isn't it?

A. That flour comes right out of the bin, into a hopper, and goes to the packer. The packers are supposed to keep that flour away, as fast as it is made.

Q. Yes, but here is your agitator up here, we will say (indicating) and here is your bin, down here—whatever the shape of the thing is. That bin is about six by six by ten, isn't it?

A. It is about six by six by—

Q. (interrupting) Ten high? A. Yes, about that.

Q. Some times it is partly full, and sometimes it is full?

A. That isn't exactly the measurements, but it would average about that.

Q. Sometimes it is partly full and sometimes it is full?

A. No, sir, it is not. It is never full, as I know of.

Q. Well, fuller than others? Do you say that that flour is not delayed, going through that, as a rule, five minutes?

A. Not more than that.

[A.] And, all that time that is going on, the gas is coming down, going into this room?

A. There is very little gas in that bin.

Q. What becomes of it, do you think?

A. I don't know. I don't think it comes in.

Q. You don't think it would make much gas, do you? Do you? A. I could not tell as to that.

Q. No? You don't know how many horse-power you
1669 have there? Isn't it true that sometimes the same flour remains in this room, six by six by ten, or thereabout, for fifteen or twenty minutes? Isn't that true?

A. I would think not.

Q. Well, now, do you know anything about it at all?

A. Why, certainly.

Q. Yes? Well, now, isn't it true that sometimes it remains there fifteen or twenty minutes? Isn't it true that the flour sometimes remains in this bin fifteen or twenty minutes?

A. Not very often.

Q. But sometimes?

A. I could not say as to that.

Q. Fifteen minutes? A. (No response.)

Q. Well, no matter how long it remains there, it is in the gas, isn't it? The room is filled with the gas, isn't it.

A. No, I don't think that room is filled with gas.

Q. Where do you think the gas goes? You have a machine, you don't know how big, to make it, and you have it air tight from the agitator. Now, it doesn't escape from the agitator, does it?

A. If you open that door, you would smell a very little gas.

Q. I am not asking you that, but I asked you where this gas gets out.

A. I do not think it comes out of the agitator.

Q. You think it stays in the agitator? A. Yes.

Q. So, then, you think that—

Mr. Butler: Oh, well. That is all. He thinks it stays in the agitator.

Recess was then taken for five minutes.

L. N. Shoecraft, called as a witness on behalf of the claimant, being first duly sworn, was examined, and testifies, as follows:

1670 Direct Examination

By Mr. Elliott:

Q. What is your name?

A. L. N. Shoecraft.

Q. And your residence? A. Clinton, Iowa.

Q. What is your business?

A. Wholesale flour—jobbing of flour.

Q. You buy flour from the Wells-Abbott-Neeman Company, of Skuyler, Nebraska? A. Yes, sir.

Q. Do you buy bleached flour from the Wells-Abbott-Neeman Company, knowing that it is bleached?

A. Why, they say it is bleached.
Q. Do you buy bleached flour in preference to unbleached flour?

Mr. Butler: Objected to as irrelevant and immaterial.

The Court: He may answer that.

A. Yes.

By Mr. Elliott:
Q. Why?
A. Because our trade like it better.

Mr. Butler: I move to strike it out, as giving a conclusion, being irrelevant, incompetent and immaterial.

Mr. Elliott: You think it is not competent for him to state.

The Court: That is competent, but that involves another question.

Mr. Butler: That involves what somebody else thinks, and he can't show what they think, without saying what they say, and he can't give that, without it being hearsay. Just like bringing a man in from another building, to tell what happens in a mill.

The Court: That part of the answer is stricken out.

Mr. Scarritt: Can't we show, if Your Honor, please, the public demand for this kind of flour—bleached flour?

The Court: This involves what I was trying to say this morning when you took exceptions to my remarks, precisely, that that involves whether or not the consumer—the bread eater, comprising the entire human family, perhaps, three times per day—

1671 Mr. Scarritt: (interrupting) If your Honor please, there is a rule of evidence. Now, we cannot bring every member of the public here. Your Honor would not permit it, and very properly so, and the only way we can get at this fact is by this kind of testimony. It is just like a question of notoriety in a criminal case, or in any other case, where all the people are advised of the one thing, and you can prove it by those who know that fact, without bringing in the whole public, to have each one of them testify that they demand this flour, and they use this flour, and they want this flour, and that this flour satisfies the public demand.

Mr. Butler: So might cocaine.

The Court: Just wait a moment. Suppose you take milk, and the customer is satisfied with it.

Mr. Scarritt: Now, that is not the question.

The Court: No, this is milk, and that is flour.

Mr. Scarritt: I was not objecting to Your Honor's illustration, but what I was going to say was, the question of poison is not in this case. The question of quality and inferiority—that is what this testimony goes to—not to the poisonous and deleterious ingredients.

The Court: It is pretty hard to distinguish. Of course, they must go step at a time. I don't know that I shall cut it out, one step at a time, because they do not cover the whole case, but, unless you gentlemen can change my mind between this and the time I charge the jury, I shall charge the jury that this Pure Food and Drugs Act is for the consumers,—not such gentlemen as this, who buy and resell, but for the bread eaters.

Mr. Scarritt: That is what we want to get at.

The Court: Well, I see you do. I will help you get at it.

Mr. Scarritt: How are we going to get at it?

The Court: Perhaps there is no one illustration that exactly illustrates my views, but, I, for years, drank milk, every meal I could get it, until I found it was loaded
1672 with formaldehyde, and other preservatives. So it is with our ham. So it is with [out] pickles. So it was with cane sugar, and beet sugar.

Mr. Helm: I suppose that is true of our ham, as long as we have smoked ham, isn't it?

The Court: No, it is of recent date.

Mr. Helm: It is my understanding it applies to ham smoked in an ordinary hickory wood fire.

The Court: No, I am not talking about ham smoked with hickory fire. I am talking about the new fangled hams. These illustrations, of course, some of them may be in point, and some of them may not be in point, but a party may be able to sell a great amount of hams that are loaded with preservatives. The trade may call for them. The trade may demand a great quantity of this milk, part of which is still being sold, and so on, with other adulterations. The trade may demand it, and, with some articles, the trade does demand it, apparently.

But the question still remains as to whether this statute covers such things. I will let him answer.

By Mr. Elliott:

Q. Now, I will ask you what class of people you sell to.

A. Sell to dealers and bakers.

Q. I will ask you if you remember buying some bleached flour from the Wells-Abbott-Neeman Company, in Skuyler, Nebraska, in March, 1909. A. Yes, sir.

Q. How much? A. Six hundred and fifteen sacks.

Q. How much of that flour did you sell?

Mr. Butler: That is objected to as irrelevant and incompetent.

The Court: Go on.

A. It was sold, all but twelve sacks.

Q. What did you do with the twelve sacks?

A. Retained them, for personal use.

Q. Have you been using this flour for making bread at
1673 your home, from that time to the present? A. Yes.

Q. Have you noticed any difference in the bread made from that flour, recently, and when you first used it, over a year ago? A. No, I have not.

Q. Have you some of that flour with you? A. Yes, sir.

Q. Will you let us see it?

The witness thereupon produced a sample of flour, as requested, which was marked by the reporter "Claimants' Exhibit 249."

By Mr. Elliott:

Q. I hand you Exhibit 249, claimants' exhibit, and ask you if you recognize that as the sack containing the flour you have referred to. A. Yes, sir.

Q. Will you kindly remove some of that flour, and exhibit it to the jury?

Witness does as requested.

Q. What is the brand on that?

A. "Puritan". There is no brand on that sack. I took it out of a "Puritan" sack.

By Mr. Butler:

Q. No brand on this sack? A. No.

Mr. Elliott: He simply took a sack, and brought some of that flour with him.

By a juror:

Q. It is not in the original package, then?

A. No. I took it from the original.

Mr. Elliott: I offer the flour in evidence.

Cross-Examination

By Mr. Butler:

Q. You hold that bleaching preserves flour, don't you?

A. I did not say that.

Mr. Scarritt: We object to that as irrelevant.

The Court: Overruled.

1674 A. (Continuing) I am not an expert. I don't know anything about the flour. We simply buy this flour, guaranteed, if it doesn't satisfy our trade we send it back.

Mr. Butler: I move to strike out that part of the answer.

The Court: Yes. It may be stricken out.

Mr. Butler: Now, I move to strike out this flour that has been brought in here, because no foundation has been laid, incompetent, irrelevant and immaterial. What does a sack of flour made by Wells-Abbott-Neeman & Company show, that he says they say it was bleached? Was it bleached with formaldehyde, or nitrosyl chloride, or how was it bleached? That is no evidence in this case. This is purely hippodromic.

The Court: I assume it will be followed up.

Mr. Butler: Followed up by what evidence?

Mr. Elliott: The witness has the original bill of lading from Mr. Abbott, and Mr. Abbott is here to swear it was that flour he sold him at that time.

By Mr. Butler:

Q. What was it branded? A. "Puritan."

Q. Was it patent flour?

A. I could put that out for patent.

Q. Was it branded "Patent"?

A. I don't remember. I could not tell you.

Q. Why didn't you bring down one of the sacks it was shipped in? A. I didn't know that was necessary.

Q. Why? A. Because I wasn't told.

Q. Were you told not to?

A. No, sir. You can have the sack. I can wire for that, if you want it.

Q. Better do that, and let us see the original package. How many months did you have this flour?

A. That car of flour was shipped March 12, 1909.

Q. March 12, 1909? How long had it been made when you got it? Did they tell you that? A. I don't know.

Q. So, it is at least fifteen months old? Was it kept in your kitchen? A. No, sir.

Q. Where was it kept?

A. It was kept in our ware room.

1675 Q. Kept with other bleached flour?

A. I don't know.

Q. Why did you keep this for fifteen months?

A. I just told you we kept it for our personal use.

Q. Why did you keep it for your personal use?

A. Because we preferred it.

Q. Did you have other bleached flour?

A. We didn't want to take any chances. We liked this, and we kept that.

Q. You have been dealing in bleached flour ever since, haven't you? A. I don't know.

Q. I thought you were a flour merchant? A. Yes, sir.

Q. Can you tell bleached flour?

A. No, sir. I don't know anything about it? I am not an expert.

Q. You don't know anything about bleached flour?

A. No, sir.

Q. Do you say this flour is bleached?

A. I don't know. I told you we bought it for bleached flour.

[A.] Aren't you a broker for Wells-Abbott-Neeman?

A. No, sir.

Q. Don't you habitually handle their flour?

A. We buy their flour. We are not brokers.

Q. Don't you habitually buy their flour? A. Yes.

Q. Tell me why you kept this flour, for personal consumption, for fifteen months? A. Because we liked that flour.

Q. That is this particular lot of flour?

A. This particular lot of flour. Didn't want to take any chances.

Q. Better than any other made by Wells-Abbott-Neeman?

A. Well, he told me that he was going to discontinue bleaching.

Q. I am asking you what you liked.

A. I told you I like that flour.

Q. You were afraid you could never get any more bleached flour?

A. We kept it, because we did not want to take any chances.

Q. He told you he was going to quit bleaching? A. Yes.

Q. Last March? A. I don't remember when.

Q. When did he tell you that?

A. Oh, no. Now, I'll tell you how we happened to have this.

Q. I want to find out why you kept this flour for fifteen months.

1676 A. I'll tell you. (producing papers) Come here. This flour was bought in a towel bag.

By the Court:

Q. What?

A. In a toweling bag—what is called as a "toweling bag" and it costs fifteen cents a barrel more for the bags than the ordinary bag. We tried to introduce this flour, because—we tried to introduce it at Clinton, because a great deal of the toweling bag was sold in Davenport, but we could not introduce it at Clinton, then because they would not pay the difference in price.

Q. You could not introduce the bleached flour at Clinton?

A. We could not introduce the toweling bag, because it costs fifteen cents more.

Q. You could not introduce the bag?

A. It would not go, because the bakers and grocers would not pay the fifteen cents more.

Q. Do you advertise? A. Certainly.

Q. Do you advertise that you deal in bleached flour?

A. We do not, no, sir.

Q. Why? A. It is unnecessary.

Q. If you say your customers are clamoring for it, why don't you advertise it? A. Because it shows for itself.

Q. How does it show for itself.

A. Because all the people want it.

Q. Who ever asked you for bleached flour? Give me the name of the consumer, or a baker, who has asked you for bleached flour.

A. We do not sell to the consumer. We sell to the grocers.

Q. Are the grocery men pretty observing about the price, so that fifteen cents a barrel will put it out? Can you sell bleached a little cheaper than you can unbleached?

A. Not that I know of. I don't know as there is any difference between the bleached and unbleached. Not that I know of. I don't know.

Q. What?

A. I don't think there is any difference between the bleached and unbleached.

Q. What kind of flour do you sell?

A. I don't know whether it is bleached or not.

1677 Q. Well, now, if this is so popular with the people who eat flour, and the bakers—by those bakers that you sell to, do they advertise this bread made from bleached flour?

A. I don't know.

Q. Do the grocery men advertise that "We sell bleached flour here"? A. I don't know.

Q. And you were brought here to show that the people demanded it?

A. I was brought here to show that this was a sample of bleached flour.

Q. Now, give me the name of a baker who refuses to buy unbleached flour, at anything like the same price.

A. I don't understand the question.

Q. Give me the name of a baker who refuses to buy unbleached flour. A. I don't know as I can.

Q. Give me the name of a dealer.

A. I am not a salesman. I am an office man.

Q. Yes, I think so. You are another man that don't know the trade. Give me the name of a grocery man who refuses unbleached flour. A. Who refuses to buy unbleached flour?

Q. Yes. A. I can give you the name of a lot of them.

Q. All right. Do it, and give us their addresses.

A. I can give you Walker & Company, Dewitt, Iowa.

Q. Now, who with Walker & Company, refuses to buy unbleached flour? A. Mr. Walker.

Q. What is his first name? A. I don't know.

Q. When did he refuse? A. I could not tell you that.

Q. To whom did he refuse? A. He refused to me.

Q. When? A. I could not tell you that.

Q. Where?

A. I talked with him over the telephone. We could not sell him this flour, because he was to buy other Nebraska flour that was bleached.

Q. Now, you could not sell him what flour?

A. Could not sell him unbleached.

Q. Because he was buying—

A. (interrupting) Other flour that was bleached.

Q. Whose unbleached flour did he refuse to buy?

A. He refused to buy our unbleached flour.

1678 Q. Who do you mean by "ours"?

A. Well, Abbott-Neeman. We are their agents.

Q. What? A. Wells-Abbott-Neeman.

Q. Why do you say "our" flour and Well-Abbott-Neeman?

A. Because we are their agents.

Q. That is what I asked you and you denied it a while ago.

A. No. I did not deny that.

Q. I asked you if you were not a broker for Wells-Abbott-Neeman. A. I am not a broker.

Q. You are just agents? A. Yes.

Q. I meant agent. I was inaccurate in my expression. You were just an agent, and not a broker? A. Yes, sir.

Q. Now, Wells-Abbott-Neeman, who furnished you this flour, had some flour with you for sale, to—what is his name?

A. Walker & Company.

Q. Yes.
A. We had previously shipped them flour, in carload lots that was bleached—that is, before we discontinued bleaching, and they could not handle the unbleached.
Q. When did Wells-Abbott-Neeman quit bleaching?
A. I could not tell you.
Q. Have they quit bleaching?
A. They did for a time, I think.
Q. What? A. I could not give you the dates.
Q. Aren't they here, now?

Mr. Elliott: Yes, Mr. Abbott is coming on the stand.

By Mr. Butler:
Q. Contributing to the defence of this lawsuit, against a man in another state?

Mr. Elliott: I object to that, if your Honor please.

A. I don't know anything about that.

By Mr. Butler:
Q. Now, what brand of flour did Walker refuse?
Q. The Wells, Abbott & Behman flour.
Q. What brand?
A. Well, now, I could not just tell you the brand.

Mr. Scarritt: This same brand, unbleached?

1679 A. Yes.

By Mr. Butler:
Q. What price? A. I could not tell you the price.
Q. What price was he paying for the bleached?
A. I could not tell you.
Q. Now, have you told us all about Walker?
A. I think so.
Q. Now, give us the name of another grocer.
A. Why, I can't remember all these things.
Q. No?
A. If you had told me you wanted it, and asked me all these things, I would have come down pat on them.
Q. Yes, if you had come around and told me what you were going to tell, I would have told you I would want these things.
A. Sorry I did not.
Q. Now, give me another grocer who refused to buy unbleached flour.
A. I don't know as I can tell you of another grocer.
Q. Now, tell me a baker who refuses to buy unbleached flour.
[Q]. I told you I was not a salesman. I do not know.

Q. Now, have you given to the jury all of the details that you can, with respect to the refusal to take unbleached flour? Have you given all of the details? A. I guess I have.

Q. All of the details as to price?

A. Yes, I have told you everything, I guess.

Q. Now, tell me a consumer who refuses to buy unbleached flour.

A. We do not sell to consumers. I do not know anything about that.

Q. Do you know of any other? A. No.

Q. Then, the sum total of it is this, that all that you can tell us about is that one groceryman, named Walker, at some point in Iowa, refused to buy some flour of Wells, Abbott & Behman Company, which was unbleached, because they had got other Nebraska flour that was bleached? A. Yes.

1680 Q. And you do not know the price they got that at, or the price you offered them Wells, Abbott & Behman's flour at? A. No.

Q. And therefore, you say—

A. (Interrupting) I can send you down quite a list of them, though, if you want them.

Q. You had better bring them back, because I might ask you some questions about that. A. All right.

Q. Better go and bring them back. A. All right.

Q. So, therefore, on that information, you say, in answer to Mr. Elliott's questions, that you prefer to buy the bleached "because my trade demands it"?

A. I said because they preferred it.

Q. And the only instance you can give is one, and you cannot tell the kind of flour that was in competition with it, or the price?

(No response.)

Mr. Butler: That is all.

Redirect Examination

By Mr. Elliott:

Q. Notwithstanding my brother Butler's question, I will ask you if you know the fact to be as you have stated?

Mr. Butler: Now, just wait. That is objected to as leading and repetition. It is perfectly outrageous to bring these men here, who don't know anything, to testify to what other people say.

Mr. Scarritt: We object to that, if Your Honor please.

Mr. Elliott: I don't know why you say that.

Mr. Butler: I do say that.

Mr. Helm: A man may know the fact, without being told.

The Court: Now, gentlemen, there are four of you. Now, who is to talk for the defense?

Mr. Scarritt: Mr. Elliott.

The Court: All right. Now, Mr. Elliott, go on.

Mr. Elliott: I simply state, your Honor, it seems to me a witness can give his testimony as a fact within his knowledge, although he may not be able to indicate every specific instance of it, and call the name. That is what I mean.

1681 The Court: I understand what the witness has testified to.

By Mr. Elliott:

Q. Do you know, of your knowledge the fact to be as you have stated, although you cannot name every specific instance?

A. Yes, sir.

Q. Did you ever hear of a grocer advertising bleached sugar? No, sir.

Mr. Butler: That is objected to as immaterial and irrelevant.

Mr. Elliott: Well, you have been asking if he advertised bleached flour and I want to ask him if he ever knew of a grocer advertising bleached sugar.

The Court: He may answer that question.

A. No, sir.

By Mr. Elliott:

Q. Did you ever hear of a grocer advertising bleached butter? A. No, sir.

Recross Examination

By Mr. Butler:

Q. Are you a grocer? A. No, sir.

Q. You don't know anything about that? You are an office man, I understand? A. Yes, sir.

Witness Excused.

T. J. Holderidge, called as a witness on behalf of claimant, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. What is your name? A. T. J. Holderidge.

1682 Q. What is your occupation?

A. I am Mill Manager—milling business.
Q. How long have you been in the milling business?
A. Eighteen or twenty years.

The Court: Where does he reside?
A. Kingman, Kansas.

By Mr. Elliott:
Q. What is the capacity of your mill?
A. 600 barrels in 24 hours.
Q. How long has your mill been running?
A. A little over five years.
Q. Do you use an Alsop bleacher? A. Yes, sir.
Q. Have you used an Alsop bleacher all the time?
A. Ever since the mill started, yes, sir.
Q. How many grades of flour do you make?
A. Well, we make an 80 per cent patent, and we make a straight grade, what we call a straight grade, and a baker's, 17 or 18 per cent.

Mr. Lyon: We cannot hear you, Mr. Holderidge.

A. We make a baker's of 17 or 18 per cent.

By Mr. Elliott:
Q. Is that the same as you have heard called as a "clear"?
A. Yes, it means the same thing, I guess.
Q. Now, what grades do you bleach?
A. We bleach our patent, and our straight grade.
Q. How do you brand them?
A. The patent is branded "High Patent" and the straight is branded "patent".
Q. Do you bleach your clear? A. Seldom ever.
Q. I will ask you, can you change the grade of a flour by bleaching it?
A. No, we cannot change the grade.
Q. Can you bleach a lower grade, and make it look like a higher grade? A. No, sir.
Q. Do you sell flour to the family trade? A. Yes, sir.
Q. Do you use it in your own family? A. Yes, sir.
1683 Q. When I said flour, I meant bleached flour.
A. Yes, sir. We use bleached flour in my own family.
Q. Have you replaced any pipes, valves, or rubber hose, connected with this Alsop bleacher, since it was installed?
A. No, sir. No new ones.
Q. How does flour bleached by the Alsop process compare, in quality and strength with flour that is naturally bleached?
A. Well, they are about the same thing, I think.

Cross Examination

By Mr. Butler:

Q. When did you first hear the word "natural bleaching" used?

A. Well, that is the way they always used to bleach it.

Q. I am not asking you that.

Mr. Butler: I move to strike that out.

The Court: Yes, that is not an answer.

By Mr. Butler:

Q. They used to call it "aged" wasn't it? A. Yes.

Q. The word "naturally bleached" was not a common word in the milling art, before the artificial bleaching commenced?

A. No, I think not.

Q. It is not yet, is it? A. No, I don't think so.

Q. That is coined out of the litigation, isn't it?

A. Yes, it used to explain the difference.

Q. That is coined out of the litigation, isn't it?

A. Yes, I think so.

Q. That is not a word of the trade? A. No, sir.

Q. Is an 80 per cent patent a higher grade than a straight?

A. Yes, sir.

Q. If they be made out of the same wheat, and under like conditions, Mr. Holderidge, will the 80 per cent patent naturally be lighter in color than the straight? A. Yes, sir.

Q. Is it true that, generally speaking, before the artificial bleaching commenced, that the color of flour was an important consideration in flour?

1648

A. Yes, sir.

Q. And is it also true, Mr. Holderidge, that, formerly, before the bleaching came in, the color of flour indicated, not exactly as to percentages, but, in a broad way, the quality of the flour?

A. Well, certain wheat has a yellow cast, makes a yellow cast of flour. Well, Turkey wheat makes a whiter flour—much whiter; a whiter flour sells for the best price in the market.

Q. Now, see that I understand this right: Different kinds of wheat make different color flours—different shades, we will say, instead of different colors? A. Yes, sir.

Q. So that the natural color would indicate, roughly speaking, if you knew the kind of wheat that was used—would indicate the length of the patent, or whether it was a straight or a clear?

A. Well, yes, sir, to a certain extent it would.

Q. And still more widely speaking, they tell me that, in southeast Missouri, and in the southern country of Kentucky, it has appeared here, there is a soft winter wheat that makes a very white flour?

A. Yes, I think so.

Q. Whiter, perhaps, than even the Turkey?

A. Yes, soft wheat is whiter.

Q. So that the color would be one of the indexes by which you could tell the quality of the flour, and the kind of wheat, or class of wheat, out of which it was made? A. Yes, sir.

Q. Now, that is true? A. Yes, sir.

Q. So that, before the bleaching, color was an index to the kind of flour, and the kind of wheat from which the flour was made—not an exact index, but of some flour, to an experienced eye? A. What is that?

Q. I say, before the bleaching, the natural color of the flour was of some flour, an index of quality of the flour, and of the kind of wheat it was made from? A. Yes.

1685 Q. Now, you, yourself, are familiar with the bleacher, are you?

A. I do not handle it. I use it. I have it done.

Q. Well, that is unfortunate, I think. I don't want to annoy you with questions that you do not know about. But, if you are intimately familiar with the Alsop bleacher, I would like to ask you. Now, are you intimately familiar with it?

A. I have had it working in the mill all the time; I see it every day or two—see it working.

Q. Do you adjust it? A. No, sir, I do not.

Q. Do you know how to make a stronger gas, or a weaker gas? Do you understand that yourself?

A. No, I do not think they change that, very often.

Q. No, but do you understand about that? A. No, sir.

Q. And you do not know how the miller, or the man who actually does the milling, does that?

A. It is set, and it runs the same way all the time. They do not change that.

Q. Well, you can control the flow of the air, can't you?

A. No, I don't think so.

Q. No means of controlling the flow of the air?

A. They can shut off a little, I think, of the air.

Q. Then, are you aware that it makes a stronger gas—that it is more concentrated, I mean? We take a given amount of gas, and then, if you dilute it with a large volume of air, the mixture will be more dilute, and, if you shut off the air, it is stronger? A. Yes, sir.

A. Yes, sir.

Q. Then, are you familiar, too, with the fact that they can control bleaching, that is, I don't mean with the finest exactness, but they can bleach light, or heavier? A. Yes, sir.

Q. So that, then, this bleacher helps you control the color of your product? A. That is what we use it for.

Q. And, by bleaching, the natural color is modified, or changed, or eliminated? Isn't that true?

1686 A. Changed some, to a certain extent, yes, sir.

Q. And if you would hit it hard enough, it would probably drive it all out, wouldn't it?

A. I don't think so; we don't bleach very hard; we bleach lightly.

Q. So that, as I get your meaning, the truth of the matter is this. We will say your straight flour, if bleached, would be lighter in color than your patent flour, unbleached.

A. Well, not very much difference, I don't think.

Q. Would make it look—

A. (interrupting) It makes a greyish color, instead of a white.

Q. Creamy color? A. Creamy color.

Q. The natural color of flour is creamy? That is, a tinge of yellow?

A. Yes. Where they have some yellowberry wheat, it makes a creamy colored, or yellow.

Q. The yellow is strongest?

A. No, sir, I do not think so. I think the Turkey is the strongest.

Q. Strongest yellow? A. No, the strongest flour?

Q. I mean the color in the flour is strongest?

A. I don't think so.

Q. Now, in the case of the yellowberry, is it?

A. No. I think the Turkey wheat makes the strongest flour.

Q. I am not speaking of the strength of the flour, but the color. The light, yellow—creamish? A. No, sir.

Q. Now, what I am trying to get at is this: Some flours have a little more creamy color, or stronger yellow, than others? A. Yes, sir.

Q. Now, the Turkey wheat, or the yellowberry—which has the stronger yellow color?

A. The yellowberry has the more yellow.

Q. The more yellow? A. Yes.

Q. Now, then, by bleaching, we will say a straight flour, if you bleach it, it could be brought down to the color of a 70 per cent patent, we will say, made from the same wheat, couldn't it?

1687 A. Not exactly.

Q. Not to exactly the same color, but it could be made lighter, even? A. That is right.

Q. So that, if you bleach your clear—which you do not do very often, you tell us? A. No, sir.

Q. —and mix it with your patent, which was bleached, then, the whole mixture would be lighter colored, than if you had not bleached it?

A. Yes, it would be lighter.

Q. Now, in the old days, before this bleaching commenced, when you knew the wheat, the lighter the color, the more desirable and valuable and better the flour?

A. Yes, sir, selling qualities.

Q. I mean the more valuable in the market?

A. Yes, sir.

Q. The more desirable to the consumer?

A. Yes, sir.

Q. So that this bleaching will take the flour which, before bleaching, was less desirable in appearance, less marketable, less value in the market, and bring it near to the appearance of the more desirable and more valuable flour in the market?

A. Yes, sir.

Q. That is, in fact, the purpose of bleaching, isn't it?

A. Yes, sir, it is to whiten it, and to age it.

Q. I will come to the aging a little later on. Of course, the aging part is also a whitening process, is it not?

A. Yes.

Q. Now, in the natural aging, the flour still retains some of this beautiful creamy color, does it not, or does it become a dead, ashen white, like the bleached flour?

A. No, it don't become ashen white. It gets whiter, the longer it stands, to a certain length of time.

Q. Now, does this bleaching—it does noit give it exactly the same shade as natural aging?

A. Not exactly.

Q. You can slick them down, and bring them together, and they are not the same, are they?

1688 A. Not exactly, no, sir.

Q. You never in your life saw bleaching match up with naturally aged color, did you, exactly, so you could not tell which was which?

A. No, sir, not exactly.

Q. An experienced eye, with the standard to go by, knowing that one is bleached and one is not, can always tell which was bleached and which was not, if he knows one is and the other isn't?

A. Well, I think they can very nearly.

Q. But, if you do not know whether either is bleached, or whether both are bleached, then nobody can tell which is which, can they?

A. Well, that ain't always the way flour is tested—by the color.

Q. No, but I am speaking, now, of the color. I will come to the other part later. I will be perfectly fair to the other part. Now, that is true with respect to the color, isn't it?

A. Well, to a certain extent, yes, sir.

Q. So that it is fair to generalize, from these details that you have given, that the bleaching does not exactly duplicate the color of natural aging? A. No, sir.

Q. That is true, isn't it? A. Yes, sir.

Q. And that is true in all of these cases of bleaching that you have observed, isn't it?

A. Well, yes, I think so.

Q. Now, then, we will go to the natural aging process. Let us see, now, if we understand yet, some of the truths of milling. It is true, is it not, that, other things being equal, that wheat which has been through the sweat in the stack, and again in the bin, and given some time to condition, is then in the best condition for milling? A. Yes, sir.

Q. You have been in the milling business for a good while, have you? A. Yes, sir.

Q. How long?

A. Eighteen to twenty years.

Q. Always in Kansas?

A. Kansas and northern Oklahoma.

Q. Was it ever customary in that territory, in your
1698 time, to stack the grains before threshing?

A. Some of them, and some threshed right out of the fields.

Q. And it goes through a sweat in the stack?

A. In the stack.

Q. And give it time enough?

A. And give it time enough.

Q. And again in the bin?

A. In the bin, if it goes through in the stack, they don't need to in the bin.

Q. But it will, to some extent, in the bin?

A. To some extent, yes, sir.

Q. And this sweat means it gives off a little moisture, around each kernel, does it not, and it warms up a little—not enough to heat, or enough to sprout.

A. It is dried. It will not sprout.

Q. If there is water from the outside, it will rot, or sprout, and must? A. Yes.

Q. But, if there is nothing but the natural moisture there, it will just sweat a little, and perhaps warm up a little?

A. Yes, come out of it all right.

Q. But the heat would not be perceptible, if you plunge your arm into it? A. No.

Q. Now, taking wheat of that kind that is aged right, and been through the sweat, a good wheat, and make your flour from it, that flour, when fresh, is not quite as good as it will become a little later on, is it?

A. No, sir; if it stands two or three months it gets better.

Q. That is the natural aging? A. Yes, sir.

Q. Now, if the natural aging of flour—and, from now on, we will call it "old wheat",—the flour made from old wheat, makes its color a little whiter, does it not?

A. Natural aging?

Q. Yes.

A. Makes it dryer, the longer it stands, to a certain length of time.

Q. And then it begins to break, and go back? I do not mean as to color, but as to quality?

A. Well, I think so, to a certain extent.

1690 Q. Well, it will spoil, if kept too long?

A. Yes, it won't keep through hot weather, every year.

Q. Spoil in a year, as a rule? A. Yes, sir.

Q. The unbleached flour? A. Yes, sir, anywhere.

Q. Any flour, except this Wells, Abbott & Behman's that was bleached?

Mr. Helm: That will spoil in three months, according to the testimony.

Mr. Butler: No; he had it fifteen months.

Q. Now, are you familiar with the doughing of this flour, after it is naturally aged, made from old wheat, and naturally aged flour? Are you familiar with the changes that take place in the bread making qualities?

A. No, sir; I am not an expert.

Q. You do not dough it up?

A. We do sometimes, yes, sir.

Q. Now, is it known to you that the bread made from the naturally aged flour is better bread than if it was made from the fresh flour, even if that flour was made from old wheat?

A. Yes, sir.

Q. That has been the general understanding, has it not, of housewives, and millers, and bakers? A. Yes, sir.

Q. Ever since you knew anything about flour?

A. Yes, sir.

Q. But now, as to what chemical changes take place to bring that about, you do not know?

A. Well, it becomes whiter, and works better.

Q. Now, what change takes place in the substance, to make it work better, is what I mean, by my question.

A. No, I am not familiar with that.

Q. You don't know whether that is in the gluten or in the starch or what part? A. No.

Q. But it is a matter of common knowledge that it does change, isn't it? A. Yes.

Q. And that is called the aging of flour, isn't it?

A. Yes, sir.

1691 Q. Now, in bleaching the flour, when it comes from the mill, you can make it look very nearly like the naturally aged flour, can't you? A. Yes, sir.

Q. Now, did you ever take that flour that was bleached, and made careful baking tests, to compare its baking qualities with the same kind of flour that was not bleached, but which was naturally aged?

A. No, sir, I have not made any such tests.

Q. And you are not able to state about that?

A. No, sir.

Q. Now, if you take the flour made from wheat that is fresh from the harvest—new wheat—that is darker than the flour made from the same wheat, after it has been conditioned, isn't it? A. Yes, sir.

Q. In color? A. It won't make up so good.

Q. But, if you bleach it, you can make it look about the same, can't you? A. Yes, sir.

Q. You can not only make it look the same as flour made from the old wheat, but you can make it look the same as flour made from the old wheat which has been aged after making? Do you follow me?

A. No, I do not know as I understand the last part of it.

Q. When you take the flour from the new wheat, fresh from the harvest, make it, and bleach it, you can make that look as good as the flour made from old wheat, after that flour has aged three months, or four? A. Yes, sir, practically as good.

Q. Now, have you ever made any tests of that? You do not know what chemical changes take place in this bleaching?

A. No, sir.

Q. And you do not know whether they are the same chemical changes that take place by the natural aging?

A. No, I do not know whether it is the same or not.

Q. But you do know that the artificial color, or bleaching, is a good deal like the natural color, with aging, do you?

A. Not exactly the same.

Q. Now, do you know how many horse power of current
1692 you use. A. How many what?

Q. Horse power of current you use to make this bleaching gas? A. I don't think it is measured that way.

Q. Well, kilowatts,—or amperes?

A. That is what they call so many kilowatts. We buy a bleacher to bleach so many barrels of flour in a mill of 500 barrels, say.

Q. As I understand it, then, this Alsop bleacher is arranged, so they have a certain strength for a certain capacity—100 would be one, and 200 would be one and 300, one?

A. Yes, sir.

Q. Now, do you happen to know the number of horse power that your bleacher uses—yours is a 500 mill? A. Yes, sir.
Q. Do you know how many? A. No, sir.
Q. Do you smell the gas about the mill? A. No, sir.
Q. Did you ever smell it at all?
A. I do, if I go up to the bin, where it empties from the agitator, that is. I smell it there, a little.
Q. You smell the gas in the bin?
A. Yes, sir, when the flour is in there, a little.
Q. Goes down out of the agitator?
A. Well, that is the way it works in there, yes, sir.
Q. The gas is conducted to one end of the agitator by a pipe? A. Yes, sir.
Q. And then the flour runs through the agitator, and the flour goes out of the agitator into a bin?
A. It goes out there, yes.
Q. That is a packer, is it? A. Yes.
Q. That will hold, say 100 barrels of flour?
A. No, it won't hold one fourth of that.
Q. Twenty-five? A. Yes.
Q. And the flour remains in that a few minutes?
A. They aim to take it right along, all the time, as they make it.
Q. But the flour would be in there some time?
A. Occasionally it is in there two minutes, and most of the time it is taken right out, as fast as they make it.
1693 Q. It would average five minutes? A. No.
Q. Three? A. Two or three, I guess.
Q. Sometimes a little remains there over night? A. Yes.
Q. Might be a few barrels in there—four or five barrels in there over night? A. Yes, sir.
Q. Exposed to the gas over night?
A. The gas rises to the top, and works right out.
Q. And works back up the spouts again?
A. I didn't say that.
Q. Is this thing opened at the top?
A. No, it is closed, or practically closed tight.
Q. So that the only hole in the top is the spout coming from the agitator, isn't it?
A. That is open, if it is standing still—the mill, or anything.
Q. That is the only inlet at the top, I mean? A. Yes.
Q. So that the gas arises to the top? The only place it could get out would be at the same place it gets in?
A. Well, there ain't very much there.
Q. No, I am not speaking of the quantity, but I am speaking of the situation. That is true, isn't it?
A. I think that is true.

Q. So that, whatever gas has accumulated in the bin, during the day, would be there, unless it was light enough to go out through the top?

A. It escapes out of the bin all the time. There ain't much there, no time.

Q. Is it within your knowledge that the gas is heavier than air, and settles?

A. No, I don't think so. I think it is lighter.

Q. You think the Alsop gas is lighter than the air?

A. I think so, I don't know. That is my understanding. I don't know as that is correct.

Q. Now, do you work the mill night and day, always?

A. Yes, sir, nearly all the time.

Q. Do you sometimes pause for lunch? A. No, sir.

1694 Q. Or dinner? A. No, sir.

Q. So, there is usually not a stop? A. No stop.

Q. Run along a week, sometimes, without stopping?

A. Yes, sir. Start up Monday morning, and run until midnight, Saturday night.

Q. So that, how many barrels do you think would average in this bin?

A. Most of the time there isn't any. They keep it right up, as fast as they make it, but they might stop for five or ten minutes, and it would fill in, and then they take it all out again.

Q. Yes, that is true, but you do not know the gas and the flour comes down into this bin, and down, on through?

A. There isn't very much gas goes through. It is more apt to go up, than down, would be my opinion.

Q. I am not asking you how much, but whatever does come down. A. Yes, sir.

Q. Goes right on through, if it goes down, and goes right into the sack, doesn't it?

A. There is a hole in the bottom of the agitator, and the flour drops through, and a certain per cent or amount of the gas works through with it—a little.

Q. Now, have you observed this—the flour comes down hill to the agitator, doesn't it? A. Yes, sir.

Q. The gas goes in at the end of the agitator, and the agitator, itself, is horizontal, is it? A. Yes, sir.

Q. And it then goes next to the mill,—and when I say mill, I mean next to the grinding part—next to the spouts?

A. Yes.

Q. Now, have you ever observed that the gas rises, and goes up these spouts, into the mill, itself? A. No.

Q. It is turned into the agitator?

A. It is turned into the agitator and the flour runs down.

Q. To the same spouts the flour comes in?

A. Right near it.
Q. So that you have not observed that the gas takes the other direction, and goes up?
A. No, I think not, to any extent.

1695 Mr. Scarritt: Blows through there.

Mr. Butler: Well, they don't have a blast down from the spouts to the mill, do they? That is a summer [sephyr].

Q. Do you say that you brand your straight flour a patent?
A. What is that?
Q. I understood you to say you make 80 per cent, and brand it a patent? A. Yes, sir.
Q. Do you make a straight, and brand it a patent?
A. Yes. We brand 80 per cent patent, and the other a patent.
Q. How long have you been so branding your flour?
A. Always, ever since we started the mill.
Q. What do you brand the clear?
A. We put it in jutes, generally, and brand it "S".
Q. What does that stand for?
A. That is just the designation.
Q. Just the way of marking the sack?
A. Yes, in shipping. We do not call it anything, to the bakers, or—
Q. Are you interested in the Alsop process, in any way?
A. No, sir.
Q. You just bought your machine from them, and that is the end of it? A. Yes, sir.
Q. No royalty business, or anything like that?
A. No, sir.
Q. Are you a contributor to the defense of this case?
A. Yes, sir.
Q. Did you attend the miller's convention, yesterday?
A. I do not know that I am, to this case, but we paid in some money to the Association.
Q. You have no interest in this mill, whose flour was seized?
A. No, sir.
Q. And the money that you have been contributing, in a general way, is used to defend this flour that is seized?
A. Yes, sir, I suppose it is.
Q. Did you attend the millers' convention yesterday?
A. Yes, sir.
1696 Q. Did you take part in its proceeding?
A. I just came there.
Q. Did you make any speeches for bleaching, yesterday?
A. No, sir.
Q. Is yellowberry a more desirable wheat than the Turkey?

A. No, sir.
Q. Is it less desirable? A. Yes, sir.
Q. Worth less, too, isn't it?
A. Worth less in the market.
Q. It is an inferior wheat, isn't it?
A. Supposed to be, yes, sir.
Q. Getting rid of the yellow berry is considered a problem, is it not? A. Yes, sir.
Q. It seems to be a disease of the wheat, doesn't it?
A. I don't know that it is. Some ground will produce yellowberry, when next year it may, out of the same wheat, grow Turkey.

Mr. Scarritt: All from the same seed, I understand?
A. Yes.

Mr. Butler: We do not claim anything about that.

Q. But, strangely enough, some of the heads, and some parts of the same head, a part of the same head sort of blights in?
A. Yes.
Q. Was it formerly called a blighting?
A. No, I do not think so.
Q. But it looks like the wheat that is not harvested timely enough, or something, doesn't it?
A. No, it is usually a very plump wheat, and a heavy wheat, and it has a yellow cast.

Mr. Scarritt: Good quality, isn't it?
A. Good quality, too.

By Mr. Butler:
Q. Well, now, let me see about that. Is it just as hard?
A. No, it ain't as hard.
Q. It is a soft wheat? A. A little softer.
Q. By comparison with the Turkey wheat, among which it grows, it is softer? A. A little softer, I think.
1697 Q. And it makes a yellower flour? A. Yes.
Q. Now, that softer, yellow wheat flour, may be bleached by this Alsop process, so as to look very near like, but not just the same, as flour made from the Turkey wheat?
A. Yes, sir.
Q. That is true, isn't it?
A. Oh, it won't make as strong a flour as Turkey wheat.
Q. No, but it will look like the Turkey wheat flour, but it never will be as strong, or as good a flour as the Turkey wheat flour, and, wheat containing 30 per cent, [of] 25 per cent of this yellowberry, never will, bleaching or no bleaching, make as good a flour as the Turkey wheat that has not yellowberry in it, will it? A. No, sir.

Q. But, by the bleaching, you can make it look as good, can't you? A. Not quite; pretty near.
Q. Yes, but you know that it would take a genius in the business, to tell one from the other, almost, wouldn't it?
A. Yes, sir.
Q. And to that extent, Mr. Gerry was deceived, or might have been by the bleaching process?

Mr. Scarritt: We object to that.

Mr. Butler: I will withdraw it.

Q. Then, the inferiority resulting from the presence of the yellowberry, would be, by the bleaching process, concealed?

Mr. Scarritt: I object to that as calling for a conclusion, and invading the province of the jury.

The Court: He may answer that.

Mr. Scarritt: We except.

A. It would be. The yellowberry, or the yellow color, is a defect in the flour.

The Court: That is not the question.

Mr. Butler: He is answering it.

A. Bleaching it, would make it all lighter colored.
Q. So that the evidence of the yellowberry, if it was not bleached, would appear in the flour, in the color of it, wouldn't it?
1698 A. To a certain extent.
Q. The bleaching of it destroys the evidence of that inferior wheat, as the source of that flour, doesn't it?

Mr. Scarritt: Same objection to that.

The Court: He may answer it.

Mr. Scarritt: Claimant excepts.

A. It whitens it to a certain extent.

By Mr. Butler:
Q. And makes it look like the flour, very nearly, so it would take, as you have told me, a genius of an expert to tell the difference—flour made from the same wheat, that did not have yellow berry in it? A. It would make it nearly so.
Q. Practically so in color? A. Yes, sir.
Q. And appearance?
A. Make it a greyish, or ashen white.
Q. So that, in color and appearance, it would look very much like the flour made from wheat free from the yellow berry, wouldn't it?

A. To a certain extent it will, yes, sir.
Q. Does this yellow berry wheat sell for less?
A. A few cents less to the bushel.
Q. It is generally considered by the millers as an inferior wheat to the Turkey wheat, among which it grows, and a part of which it is, apparently? A. Not worth as much money.
Q. And the flour, itself, is yellower, and of an inferior color?
A. Not so strong.
Q. And cannot be made so strong, even by bleaching?
A. You cannot make strength.
Q. Now, when you say it is not as strong, what do you mean—that the dough is not so good?
A. Bakers do not like is as well as they do the Turkey wheat. Now, a good baker,—a large baker that buys flour, he is very particular. He wants all Turkey wheat flour,
1699 and if you go to putting this in, he won't have it. He will turn it down.
Q. Yes, sir, if he knows it? A. He will know it.
[A.] He won't, if it is bleached? A. Yes.
Q. How?
A. He can tell by working it, the amount of dough, and the strength, and so forth.
Q. A large baker, experienced in handling flours, could tell the difference in the dough, regardless of the color?
A. It has not got the strength.
Q. A flour made from the yellow berry, if it is sold as such, and known to be such, will not bring as much as flour made from the Turkey, will it? A. No, sir.
Q. But, if it is bleached, so as to look just the same, and the customer cannot tell the difference, then it may sell for as much money, may it not?
A. Well, not to an expert.
Q. Well, I mean to the ordinary household consumer?
A. To a certain amount, yes, sir. It won't give you the satisfaction. It will not give the satisfaction to the manufacturer that is making it, that all Turkey wheat would.
Q. The flour is inferior? A. It may go and work.

Redirect Examination

By Mr. Elliott:
Q. Do you bleach your clears, and add them to the patent flour?
A. We do not bleach the clear, unless it is a special order, or something, to go somewhere; seldom ever bleach it.
Q. And if you did bleach your clear, and add it to your patent flour, what would happen to the grade of your patent flour? A. We do not do that, never done it in my life.

By Mr. Scarritt:

Q. You put "bleached" on your sacks, too, out in Kansas?

A. Yes, sir.

By Mr. Butler:

Q. Do you, on interstate? A. Only for the state.

1700 By Mr. Scarritt:

Q. Is it "electrically bleached"?

A. Electrically bleached on every sack, in the state.

The Court: Every one you sell in the state?

A. Yes, sir.

The Court: Supposing you sent me the flour to Iowa; would it be marked "bleached"?

A. No, sir.

(Thereupon the court adjourned to ten o'clock A. M. Thursday, July 23, 1910.)

Morning Session.

Kansas City, Missouri, Thursday, June 23, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

Lucius E. Sayre, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Q. Professor, will you give us your full name?

A. Lucius E. Sayre.

Q. And your residence? A. Lawrence, Kansas.

Q. Will you please state your qualifications, Professor, as an expert?

A. In 1866 I graduated at the Philadelphia College of Pharmacy. After graduation I had charge of the laboratory of Frederick Brown, Fifth and Chestnut Streets, Philadelphia. After that I had charge as manager, chief clerk of the

1701 business of Henry C. Blair Sons, Eigth and Walnut Streets, Philadelphia, for ten years.

Q. What was their business?

A. They were dispensing pharmacists. Subsequent to that I went into business at Eighteenth and Market in partnership with Joseph P. Remington, under the firm name of Remington & Sayre, manufacturing pharmaceutical chemicals and dispensers. At that time I was also elected as an instructor in

the Philadelphia College of Pharmacy, and as professor of pharmaceutical chemistry at the Women's Medical College of Philadelphia. Subsequent to that I was called to the deanship of the School of Pharmacy, a duly created school of the University of Kansas. I have been in that position since 1885. During my period as manufacturing chemist I paid considerable attention to the subject of ferments.

Q. Now, let me ask you, state also if you will, Doctor, where you prosecuted your studies, in the chemical lines, I mean?

A. I should have said that at the Philadelphia College of Pharmacy, and subsequently to that, I obtained the degree of B. S. at the University of Michigan, Ann Arbor, and also had the degree of A. M. at the Philadelphia College of Pharmacy.

Q. Are you a member of any of the societies?

A. A member of the American Chemical Society and a member of the American Pharmaceutical Association, and also a a member of a number of similar bodies in which I have held important offices, at one time chairman of the scientific section of the American Pharmaceutical Association.

Q. Have you done any research work, Professor Sayre?

A. I have.

Q. Of what kind?

A. I have been engaged in research for a good many years on various subjects, but those which I consider more prominent are the researches, in the first place, loco weed.

Q. Loco weed?

A. Yes, sir, it grows in the western part of Kansas, astragalus—the botanical name of that astragalus mollissimus; it infested the fields of Western Kansas, and I was asked by a member of the Board of Agriculture to investigate that subject it seemed to be killing the cattle out in that portion of the state; I published a number of articles upon that. Then later on, the one following subject that I consider of some prominence is the investigation of the cactus, cactus grandi
1702 florus; the investigation was to ascertain its action upon the heart.

Q. Have you any connection—beg pardon.

A. And further, recently I have received some degree of satisfaction in the fact that I have discovered in one of the southern plants one of the heart sedatives—yellow jasmine is the common name of the drug, gelsimium, a new principle; heretofore the action of the gelsimium has been considered as vary vague; I think I have thrown some light upon the subject by having discovered a third principle in which it seems to act physiologically. In a way that explains and also clears up some of the ambiguities that refer to the action of that drug. Now, prominently also I might consider the question of the in-

vestigation of pepsin. I claim to be the discoverer of a form of pepsin which was introduced into Philadelphia as a new form, I supplied the hospitals at the time with pepsin known as the scale pepsin. Now, my right to this discovery was questioned, and it was necessary to take this matter up in the courts which was done, and in ten years' investigation it was found that my claims were as I had made them. Of course my claims were not of a financial character, simply a question of professional priority.

Q. Yes. Now, have you any connection, Professor Sayre, with the Kansas State Board of Health; if so, what is it?

A. I have. I am by the Legislature appointed as a director of drug assaying and drug analysis, which includes also the spices coffee, and other material, which is frequently referred in our laboratory for final decision.

Q. Have you any connection with any state institutions?

A. I am connected with the University of Kansas, and am dean of the School of Pharmacy and also professor of materia medica.

Q. Now, how long have you been in that position?

A. Since 1885.

Q. I will ask you to explain what duties are connected with the department of materia medica, what does that deal with.

A. The department of materia medica is supposed to treat of the nature of medicinal agents, remedial agents, drugs, as we call them, in a general way, they are all classified 1703 under the food and drugs law as drugs, their action and use mainly, and hence of course my investigations as I have named it in two of these important medicinal plants.

Q. I hand you a work and ask you to state what it is; and what, if anything, has been your connection with it?

A. This is the Pharmacopoeia of the United States.

Q. What, if anything, has been your connection with that work?

A. I have been connected with the revision of this work for thirty years; that is to say, I was appointed on the revision committee in 1890, again in 1900, and recently in 1910. My name appears here on page 19.

Q. Now, what do you mean by being on the revision committee; what does that committee do?

A. The revision committee has to do especially, in the first place, with the question of admission of drugs and remedial agents of all classes into what is considered as the standard work; the next is to standardize those materials so that they shall be uniform in strength and quality, so that physicians in any part of the country, or in fact it may be in Europe, may obtain drugs of the same strength and the same quality, as for

example, suppose we were to take a common article known as quinine, which is used all over the world, the standard for quinine is set by the Pharmacopoeia, and this revision committee is required to state in understandable terms to the chemists what shall be the quality of this and how to detect any common adulteration or any minor adulteration that may appear in the quinine.

Q. Does that also give the doses for the average?

A. This gives the average dose only.

Q. I will ask you if that is the work which is named in the United States Pure Food and Drugs Act as the standard for drugs?

A. This is one of the works that is named as the standard, yes, sir.

By the Court:

Q. That is the American Pharmacopoeia?

A. Yes, sir, United States Pharmacopoeia.

1704 Q. I mean United States.

Judge Scarritt: United States government.

By Mr. Elliott:

Q. Have you done any special work, Professor Sayre, other than you have mentioned in connection with ferments?

Judge Scarritt: How long has he been on that revision committee?

A. Well, this is my third appointment, understand this is the third appointment, I was first appointed in 1890, and the last appointment was 1910.

Q. My question is have you done any special work other than you have mentioned in connection with ferments?

A. I have.

Q. Please state what.

A. Well, it was necessary in the manufacture of ferments, particularly pepsin, to study the question of the fluctuation in the strength of the ferments, that is, the fermentation activity of the ferments, and the causes of the modification of the action of these ferments; it was necessary to do this on a commercial basis in order that we should get hold of the strongest pepsin and the most uniform pepsin that could be obtained, and of course in that connection it was necessary for me to state those substances which would in any way interfere with the digestive process.

Q. I will ask you if you are familiar, Professor Sayre, with the effect upon flour of bleaching it by the Alsop process?

A. I am.

Q. When did you first do any work in connection with bleached flour, and under what circumstances?

A. My first connection with the investigation of bleached flour was about last October a year, October and November, that was my first connection with it.

Q. And under what circumstances, I asked you?

A. The circumstances were these: One of the millers of the state of Kansas asked me—

Mr. Butler: I think I will object to that as irrelevant.

Q. Don't state what he did or said; just state what—

A. Just state what I did?

Q. No, I mean if any samples were submitted to you, or anything of that kind, don't bring anyone else in.

A. No, very well. Two samples of flour, twenty pounds
1705 each, bags, were sent to the laboratory. Now, the question was whether these two flours differed materially so far as their wholesomeness—

Q. Was one of them bleached and one of them unbleached?

A. I was going to say that one of them was labeled "bleached" and the other "unbleached".

Q. Now, did you make a determination to see if not one of them was actually unbleached? A. I did, yes.

Q. And one bleached? A. Yes.

Q. Now, what was the character of the investigation of such flour?

A. The character was to ascertain, in order to ascertain whether these flours, whether the bleached flour particularly, of course, was unwholesome or deleterious.

Q. Now, tell us what you did?

A. Well, in the first place we have—my experiments, I should say, in point of time have gone on from that date, and I could not give you the exact chronological order, just the experiments that were made from day to day.

Q. This particular flour, upon that flour?

A. The principal experiment that I performed upon that first flour was this, first was the submitting of the two flours, say the unbleached flour we will call the controlled flour, and the bleached we will call the test flour, I had bread made from each of these two samples; I partook of this bread myself for some time, and had it served at my own table. I thought that my wife would be a good test; she has a very delicate digestion and very susceptible to any extraneous material, so that, with her consent, I had her to submit to this investigation, and she was unable to decide, as I was not, I was unable to decide—

Mr. Butler: Wait a moment, Professor.

The Court: Yes, sir, that is hearsay and objectionable.

Mr. Butler: We will not object to the experimentation with his wife, I think.

Witness: Beg pardon.

By Mr. Elliott:

Q. State only your own observations.

A. I am much obliged, I did not—

1706 Q. Just state your own observations.

A. My own observation was that I could not distinguish between the two, the two breads, that is the bleached flour bread and the unbleached, except that in the matter of color.

Q. Now, what other investigations, if any, did you make in connection with that flour?

A. I submitted the flour to the process of digestion, and I found that the action of the ferments were the same, so that I could not distinguish between the two flours. May I say that —well, I presume I had better not make any more statements than that; I wanted to carefully go over my ground, and I sought out the mill that was making this flour, and collected samples myself.

Q. All right. Now, this digestion experiment you have spoken of, that was with what digestive agency?

A. The pancreatic.

Q. Just tell us what the pancreatic digestion corresponds to in the human system, so that we can understand.

A. Well, it is the digestion which corresponds to the digestion, of course it would be proper to say, scientists would understand it would correspond to pancreatic digestion—but perhaps—

Q. Where does pancreatic digestion take place in the body?

A. Oh, that takes place in the alimentary tract.

Q. The alimentary track?

A. Yes, sir, yes; there are two. the gastric digestion, the gastric digestion is that of the prolific digestion, that is the digestion of meats and albumen and substances of that sort, but the pancreatic digestion in this case was what we call diasthonic digestion or the digestion of the starch, the main portion of the flour consisting of the starchy substances. Now, may I state that my theory being that the digestion here would be unfair, that if there was an inhibiting action on the part of nitrites, that is to say, that if the digestion of the flour in the pancreatic fluid, which we may say is similar to that, for the present purposes, to that of the saliva, we may say that that will digest the starch, it is converted into soluble starch, first into a soluble dextrain, and finally into the end products, it is a reducing sugar, I would say that this pancreatic digestion would

1707 be unfair, that in case there were any substances, in my opinion, that were detrimental to health, that is to say, there would be a sufficient amount there to interfere and show a retardation in the action of the pancreaden. Now, pancreaden

is a substance which is well known, two solutions of that are made by the United States Pharmacopoeia, a formula is there given, what we call the official solution is made and the starch solutions are tested; the solution of flour, of the unbleached and the bleached, we run parallel, and we could see no difference between the digestibility of the two flours, you understand.

Q. Yes.

A. Under the influence of this pancreatic digestion, that is as to time and as to rapidity.

Q. Do I understand you to say that you had subsequently done some other work with digestion, subsequent to this first investigation you made?

Judge Scarritt: Other experiments with flour.

By Mr. Elliott:

Q. Other experiments with flour. Now, I will ask you what was the next work you did in connection with this subject?

A. Well, the next subject was to test the flour, the two flours together, the same, running parallel experiments, you understand, controlled experiments and test experiments, you will understand what I mean, with saliva, and I found no difference in the digestibility of the flour, of the two flours.

Q. Now, what else, if anything, have you done in connection with this investigation?

A. The next investigation was to ascertain, if possible, the effect of what is known as the nitric re-acting material upon myself.

Q. Now, let me ask you before that, if you done any work to ascertain if this nitrite re-acting material would be in any manner modified by the process of digestion?

A. Yes, I have.

Q. Now, will you please tell us what the nature of that work was?

A. In order to ascertain what was the fate of this nitrite re-acting material in the process of digestion—

Q. Yes, sir.

A. How could I account for this similarity of action of these two, admitting, for example, that there might be,
1708 as it was shown, of course, that there were nitrite re-acting materials in the bleached flour, the natural question was, can this lack of retardation [of] lack of slowness be explained in any way, naturally I had performed in the laboratory, in my presence, in the physiological laboratory, this re-action which I had performed; the flour was put into the digestion as usual.

Q. Now, first, did you have some bleached and unbleached flour?

A. Yes, always I had flour, whether it seemed to be necessary or unnecessary for purpose of satisfaction I would always carry the two along together, but in this case I did not think that the unbleached flour was very necessary, but always carried that along.

Q. All right.

A. But at this point I wanted to reach—I suspected that possibly the nitrite re-acting material was not in any [was] inhibiting the action of the ferments by bringing it down itself, so the process was performed again and again and at different stages of the digestion the nitrite re-agent, the nitrite re-agent was applied ever so often.

Q. Now, I am afraid we are not getting this in detail sufficiently. Now, first tell us what you did with that bleached flour, if you will, Professor.

A. I submitted this—

Q. What was the nature of your experiment, just in a general way?

A. Well, I submitted the bleached flour to the action of the pancreaden.

Q. Pancreaden?

A. Yes, the digestive experiment, solution of pancreaden.

Q. Now, you can proceed.

A. Now, then, every few minutes portions of the flour solution in the process of digestion was taken out and tested for nitrites or nitrite re-acting material, you understand that?

Q. Yes, sir. Now, just let me see if I do—well, go ahead.

A. Now, then, after fifteen minutes the nitrite re-acting material in one case disappeared, but it did not disappear that suddenly in all cases. We found that in some cases that it disappeared very rapidly in the peptic digestion, I should
1709 have said that I had peptic digestion going along with the pancreatic digestion, sometimes it disappeared more rapidly in the peptic digestion and sometimes more rapidly in the pancreatic digestion. Now, the limit, the ultimate limit at which nitrite re-acting material disappeared was an hour and a half in the case of the pancreatic and the minimum time was fifteen minutes. Now, of course, I controlled these experiments by an Oswald thermostat and the water bath which is arranged so as to have circulation constantly kept up, and had the conditions uniform as far as they could possibly be made.

Q. Now, just let me see if I get that, Doctor. As I understand it you have two receptacles? A. Yes, sir.

Q. And you have got a pepsin solution in one and a pancreatic solution in the other, is that correct?

A. Yes, that one is bleached flour and one—both are bleached flour, one is pepsin and the other is pancreatic.

Q. In two separate receptacles?

A. In this case—well, we ran the unbleached flour, that had no nitrites in it anyway.

Q. Now, dealing with the bleached flour. A. Yes.

Q. As I understand it, you put in this receptacle containing the pancreaden some mixture of water solution, was it, or bleached flour, or just the raw flour?

A. A solution of the—

Q. Of flour? A. Of the flour, yes, sir.

Q. You put that in one? A. Yes, sir.

Q. Then you put a solution?

A. A solution of the flour in the other.

Q. And the pancreaden also?

A. Yes of the same strength.

Q. Here is the point, in determining whether that nitrite diisappeared, as I understand it, you took from time to time some of this liquid out? A. Yes, yes.

Q. And test it? A. Yes, sir.

Q. And so with each one?

A. Yes, sir, yes, sir.

Q. And doing that, as I understand it, after a certain length of time you found a liquid you took out of here, it does not respond to the Griess re-agent, is that correct?

A. That is the idea, that is the way the test was performed; it could have been performed in that way,
1710 but I dictated that it should be performed in that way, and that is the way it was performed.

Q. Now, you did the same thing with the unbleached flour?

A. Yes.

By Mr. Butler:

Q. I want to ask did you do these experiments or dictate them?

A. I did the experiments myself, my associate Professor Emerson also did the experiments, so as to—we always verify as we do in all work, we endeavor to get as many sources of information as we possibly can, our training in the pharmacopoeial revision committee teaches us that no one experiment or one man's experiment is quite sufficient, it is necessary that our experiments shall be done by other person.

Q. Yes.

A. Now, Mr. Emerson is my associate and is director of the laboratory, of course it is my own custom to perform experiments in my own laboratory, and at the same time have the experiments performed in the other laboratory, but I do not wish to here testify as to Mr. Emerson's result; he is here and can testify for himself.

Q. But I will ask you to state briefly what these experiments, in your opinion, demonstrated, that you just testified to?

Mr. Butler: I think I will object to that.

By Mr. Elliott:

Q. What conclusion did you draw from these experiments, then?

A. My conclusion was that the nitrites or that nitrite re-acting material was disintegrated or broken down, the combination, whatever that was, was broken down, so as to make the nitrite re-acting material disappear so far as the chemical tests and observations were concerned.

Q. Now, assuming, Professor Sayre, that flour bleached by the Alsop process containing 1.1 parts of nitrite re-acting material is made into bread, and assuming further that that bread contains, well, we will say in round numbers one part per million of such nitrite re-acting material, and that bread is consumed by a person, now, I will ask you what bearing, if any, do these experiments you have made have on the question of what occurs in the body when such bread is eaten?

1711 A. My observation convinces me that those nitrites even in that quantity, 1.8 per million, are broken down and become inert, so to speak, and absolutely inactive. I am not prepared to say that really digestive substances may be formed, but from my observation or from my reading it is possible for certain compounds to be changed by the breaking down of nitrites into new substances which are not foreign to the digestion process.

Q. Now, as a result of these experiments I will ask you your opinion—

A. May I qualify the statement that I have made in regard to[—]? You are speaking of bread, and I am afraid that perhaps we are becoming confused in speaking of bread and flour, you understand. Now, I should have answered your question in this way, that in my opinion the flour which is assumed to contain, for example, 1.8 per million, if it passes through the process of baking, as I have performed the process of baking, through the fungus ferment, that is the yeast, the bacteria ferment, that is the salt rising process, and also the baking powder process, making biscuits, my experience in these leads me to the conviction that in the bread as it is ingested and as it is digested, passing through the process of digestion, my opinion is that the amount of nitrites, supposing they are nitrites, or at least the nitrite re-acting material, the amount is negligible so far as the digestion is concerned, when it is digested out of bread.

By Judge Scarritt:

Q. What do you mean by negligible?

A. Negligible, that is, can be absolutely not considered as active or as practical, at any rate.

Q. Harmless? A. Harmless, yes.

By Mr. Elliott:

Q. Now, as a result of these experiments, Professor Sayre, I will ask you your opinion under the assumption of the last question, as to the possibility of nitrite re-acting material or nitrites there in this bread getting into the blood circulation?

A. I further tried to satisfy myself in regard to that; I had two volunteers with me.

Q. Yes, I want the detail on that test later, but I am
1713 just simply asking your opinion from these experiments.

A. Yes.

Q. As to what, in your judgment, would be the possibility of such nitrite re-acting material from this bread, if it is there, getting into the blood circulation? A. No possibility.

Q. Now, have you any knowledge of the use of nitrite as a medicine? A. Yes, sir.

Q. Have you made any experiments to ascertain the effect of nitrites on the blood when taken internally? A. I have.

Q. Please state what you have done.

A. That was necessary to further investigate this subject, so I allowed myself, as I did in the case of loco—

Q. Professor, you better turn a little so the gentlemen can hear.

A. In the case of loco I submitted—was subject to the poisoning by loco, so I submitted myself to the poison of nitrite. I took two days in succession nitrites, the nitrite of sodium on the first day. I took three grains in one dose in the morning about nine thirty, and then I took a second dose of three grains two hours afterwards.

By Judge Scarritt:

Q. The same day?

A. The same day, and allowed that to incubate, so to speak, or pass into the circulation with the heat of the body, and so forth, and with the spectroscope in the laboratory, why, I tested for the methemoglobin, and I could find no evidence of the appearance of methemoglobin, and on the following day I took the second dose and repeated that and with the same results, absolutely negative results, I could not get any methemoglobin.

Q. Did you take the same doses on the second day?

A. Yes, sir, the same doses on the second day, six grains in all, two hours apart. Then I got my helpers to work and administered to them—of course, they willingly, seeing that I

was safe, were willing to go one further, and they took on the first day three grains every hour until nine grains had been taken, two persons, Professor Emerson, our physiological chemist, and a Mr. Jones, who is a chemical student I had them to take three grains an hour apart, making nine
1713 grains, that was on the first and second day, we allowed them to remain in the laboratory and to test the blood at various periods after that, and no appearance of methemoglobin was made after allowing sufficient time for the development of this methemoglobin.

Q. I did not quite understand, Professor, of these gentlemen you have named, did you give them nine grains on each of two days? A. Each of two days.

Q. On each of two days? A. Each of two days.

By Judge Scarritt:

Q. Following days?

A. Following days, one following the other.

By Mr. Elliott:

Q. Now, in examining your blood and the blood of these gentlemen with the spectroscope, you simply obtained some blood from your body, did you?

A. Just took out from underneath that point, right underneath the finger.

Q. Under the finger nail?

A. Just at this point (indicating).

Q. Above the finger nail?

A. Just above the finger nail, there, I don't know whether I can show you.

Q. Well, the point was you extracted some blood from yourself?

A. After first washing the finger with alcohol and water, getting it perfectly clean, aseptic, and then puncturing and taking up the blood.

Q. That is all.

Cross-Examination

By Mr. Butler:

Q. Since this trial has commenced—is it Doctor Sayre or Professor Sayre? A. Professor Sayre, if you please.

Q. Professor Sayre. Since this trial has commenced, Professor Sayre, I have been thrown into the greatest possible mental confusion about the various professions that I encountered relating to the subject, and I therefore desire to ask you some questions as to the limitations of the various professions and specialties and sciences. Now, I gather from your testimony —let me see, how old are you? A. Sixty-two.

Q. And you were a graduate of a college of pharmacy?

A. Yes, sir.

1714 Q. Then you worked in a laboratory? A. Yes, sir.
Q. That is a drug store or pharmacy?
A. And I was with Professor Bridges, working with him, and also with Professor Maish.
Q. Then you were the chief clerk in a—is that wholesale or retail? A. That is a retail store, yes.
Q. Retail drug store?
A. In the laboratory, of course, we make chemicals.
Q. Then you were in the drug business a while?
A. Yes, sir.
Q. Remington and yourself? A. Yes.
Q. Then you were an instructor in the college of pharmacy in the Women's Medical College at Philadelphia?
A. Yes, sir, that is right.
Q. Then you became in 1885, now twenty-five years ago, the dean of the college of pharmacy or the school of pharmacy in the University of Kansas? A. Yes, sir.
Q. You paid some attention to ferments. A. Yes, sir.
Q. You made some research on loco weed that kills cattle?
A. Yes.
Q. You discovered the yellow jasmine in some plant in the South?
A. No, I did not. I discovered one of the new principles in that plant, of course.
Q. The new principle you discovered pepsin and established your claim as a discoverer after ten years of litigation.
A. I discovered gelsimium.
Q. You took a bachelor of science degree in the University of Michigan? A. Yes, sir.
Q. In what year? A. 1894.
Q. 1894—at what age?
A. Well, you can calculate that, I don't—
Q. What year were you born? A. I was born in 1847.
Q. '47 from '94 leaves 47? A. Yes.
Q. What is the average age of bachelor of science in the University of Kansas? A. What is the average age?
Q. Yes. A. Of a Bachelor of Science?
1715 Q. Yes. A. I couldn't tell you that.
Q. Along about twenty-one or two? A. Oh, no.
Q. Don't you confer the ordinary degree of Bachelor of Art and Bachelor of Science; what I am trying to get, this degree of Bachelor of Science is one conferred by the colleges and universities of the country generally? A. Yes.
Q. And usually given after four years of school, they take them in the freshman class?
A. Oh, no, you are mistaken, that degree that you are thinking about, you are thinking of the Honorary Degree of—
Q. No, I am not thinking of an honorary degree at all.

A. Oh, yes, I understand you—beg pardon.
Q. I confer a few of these every year myself in Minnesota.
A. Yes, sir, I understand.
Q. And they get some about twenty-two years old, do you say? A. Yes, that is right.
Q. And you got this when you were forty-seven?
A. Yes.
Q. How long were you at the University of Michigan?
A. I was not there any great length of time; my work was largely—
Q. Was it an honorary degree?
A. No, it was in connection with some work that I did in chemistry with Professor Prescott.
Q. How long were you there?
A. Well, I was engaged in that work for a year.
Q. How long were you at Michigan?
A. Oh, I was not there but a short time.
Q. How long?
A. Oh, about in all, I don't suppose I was over there about two or three months, two months.
Q. In the year 1904?
A. Yes, I was consulting with Professor Prescott all the time.
Q. And you took the master's degree when?
A. Master's degree at Philadelphia College of Pharmacy.
Q. That was for your scientific researches?
A. Yes, sir, afterwards, I, of course, was doing work with the Philadelphia college of Pharmacy in connection with our laboratory.
1716 Q. Now, did you ever practice medicine?
A. I never practiced medicine.
Q. You are not a medicial doctor?
A. I read medicine with Dr. Oak Wright.
Q. Are you a medical doctor? A. Yes, sir.
Q. Were you ever licensed or qualified to practice medicine under the laws of any state? A. No, sir, but—
Q. Are you a specialist in anatomy?

Counsel for claimant objected and asked that the witness be permitted to complete his answer.

Mr. Butler: I asked him if he was ever licensed to practice medicine in any state; he said no; now, that is the end of it; of course if he goes on and begins to tell of everything else in the world we never will get through; I only want to know whether he was a physician or not.

A. No, I am not a physician.

Judge Scarritt: Now, go ahead, inquire all you want to.

By Mr. Butler:

Q. Now, is there anything that you want to add or explain or qualify to that answer? A. No.

Q. Are you a surgeon? A. No, sir.

Q. Are you a physiological chemist?

A. I am not a physiological chemist in the sense in which that term is used now.

Q. Are you a toxicologist? A. No, sir.

Q. Are you an analyist? A. Yes, sir.

Q. Organic chemistry? A. Yes, general analysis.

Q. Where did you take that instruction?

A. Why I took that instruction up very largely, the foundation of that instruction was in the Philadelphia College of Pharmacy, and in connection with my work with the revision committee of the United States Pharmacopoeia, and I suppose the point might be made that my experience of forty years is the best school that I have been at.

Q. That is what I think myself. Now, in the Pharmacopoeia, how many members from each state; you are a member from Kansas on that committee? A. Yes, sir.

1717 Q. How many members from each state?

A. They differ, some states have two, some one.

Q. What is the total membership?

A. Twenty-five; There is fifty now.

Q. There is forty-five states, isn't there?

A. Well, there is not one from each state, no, but shall I tell you how the committee is—

Q. No, I want to get about how many there are?

A. There are twenty-five from 1890 to 1910 there were twenty-five members on the revision committee, and now from 1910 to 1920 there will be fifty members of this revision committee.

Q. Well, their names are all here?

A. The names of the revision committee for 1900 are there, but the present revision committee—

Q. You pointed out your name here? A. Yes, sir.

Q. I find Andrew S. Mitchell here, in here too, this gentleman over here, so we have two members in the courtroom now, haven't we? A. Dr. Haynes is another one.

Mr. Butler: I will just submit that to the jury so they can look at the list from the various states.

Q. You say there is twenty-five of them?

A. Twenty-five.

Mr. Butler: So they can see who they are.

Mr. Helm: You have got three of them right here.

Q. Now, poisons have something to do with this case so far. Is flour poison? A. Is flour?
Q. Yes, unbleached flour? A. No, sir.

By the Court:
Q. What? A. Unbleached flour, is it a poison?

By Mr. Butler:
Q. Yes. A. No, sir.

Mr. Elliott: The gentleman stated he is not a toxicologist.

Mr. Butler: I know, but he has had forty years' experience with drugs.

Witness: Well, your question was whether unbleached flour was a poison.

Q. That is just my question. It is not a poison, is it?
A. Well, unbleached flour as we—I don't mean to say that unbleached flour that would be in a state of putrefaction—
1718 Q. No, I mean nice flour. A. Certainly.
Q. Is bleached flour a poison?
A. Is bleached flour a poison?
Q. Yes, sir, by the Alsop process, I mean wholesome flour that is bleached, I don't mean any rotten flour. There are no catches in this question. A. No, sir.
Q. Is table salt a poison? A. Is table salt a poison?

The Court: Yes, sir.

A. It depends upon the quantity that is taken.

By Mr. Butler:
Q. Can you mention a poison?
A. Can I mention a poison?
Q. Or any substance that is a poison. A. Yes, sir.
Q. Do it.
A. Strychnine would be poisonous in certain doses.
Q. Well, I want a poison without any qualification; is there any that is a poison; strychnine and salt are not the same, are they? A. Why, everything depends on quantity.
Q. Everything, then is flour a poison?
A. Well, those articles which are poison are dependent upon the quantity, so regarded as—
Q. Is flour a poison?
A. Not regarded as a poison; it is a food.
Q. It is a food? A. Yes, sir.
Q. It is perfectly absurd for any man to claim, any professional gentleman to claim that wholesome wheat flour is a poison?

Judge Scarritt: We object to that; it is a mere argument.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Unbleached flour is not a poison, that is a question I have answered that, I believe.

Q. Now, then, you are a pure food officer yourself?

A. No, sir.

Q. You are connected with the Board of Health?

A. Board of Health, in connection with the operation of the pure food and drugs law, and have the charge of the drugs laboratory as director of it and an analyist of that department, have four men that I direct.

1719 Q. You have charge of the execution of the laws of Kansas, pure food laws?

A. I am on the advisory board, simply.

Q. Can foods be adulterated, in your opinion, by the addition of poisons?

A. Well, do you mean to say whether unbleached flour, for example—

Q. No, I am not talking about flour at all, I am asking a general question, because—I am doing it for this reason, Professor Sayre unless you and I can come to an understanding as to the meaning of some terms there is no use in our talking, because we cannot get along at all, unless we can agree on some simple facts that are commonly understood between the members of the human family, that food is not a poison?

A. Oh, yes, food.

Q. And that strychnine and prussic acid and corrosive sublimate are? A. Yes.

Q. Unless we can agree about that it would be—

A. That is true, there will be no disagreement, of course, we understand that, no disagreement on that at all.

Q. Now, then, we have agreed that certain substances are by nature poisonous, and certain substances are by nature non-poisonous; that is agreed, is it not? A. Well.

By the Court:

Q. Answer audibly.

A. I merely nod my head as if I were understanding him; I am not answering his question at all.

By the Court:

Q. All right.

A. I am simply trying to comprehend his question. Now, the question he asked me, I want to see if we agree as to poisons.

Mr. Butler: No, let us begin again and see if we can understand each other.

The Court: That is a fair question.

Mr. Butler: I am going to be perfectly fair with Professor Sayre, that he may understand the term, so that we may talk about it—

Witness: Certainly.

Mr. Butler: Fairly, and incidentally I will ask you if
1720 it is true that certain substances such as wholesome foods may accurately be said to be not poisonous, and is it true that there are substances which are by their nature poisonous substances?

A. Well, I want to qualify that, if you please.

Q. All right.

A. That the latter substances are poisonous in certain quantities.

By the Court:

Q. In what?

A. In certain quantities, that is the point.

By Mr. Butler:

Q. Then there are certain substances which are not poisonous at all? A. Yes, sir.

Q. Don't produce poisonous action? A. Yes, sir.

Q. Then there are certain other substances that do produce poisonous action? A. In certain quantities.

Q. In certain quantities? A. Yes, sir.

Q. The degree of action depending upon the quantity?

A. Yes, sir.

Q. But the nature of the substance is poisonous and poisonous substances? A. If taken in a quantity,—

Q. But I am now speaking of the nature of the substance, it is by nature a poison, corrosive sublimate is a poison to humans?

A. I am afraid of misleading, I am afraid of misleading by saying yes or no because it is a question of quantity there.

Q. Oh, yes, all right, all right. A. I want to tell the truth as far as I know it.

Q. Yes, so then as a health commissioner we will say that the rule of your department is that poison shall not be added to food, we'll say that is the rule? A. That is all right.

Q. Now, you are an expert to tell the laymen whether or not poisons have been added to food. Now, we have here our cantaloup for breakfast, we will take an ordinary breakfast.

A. Yes, sir.

Q. Some prussic acid in it, not enough to produce a result to show a symptom; we have some coffee, some prussic acid in it, not enough to show a symptom; some shredded wheat biscuit, some prussic acid in it, but not enough to show a symptom, some bacon, some prussic acid in it, but not enough to show a symptom? A. Yes.

1721 Q. That is a pretty good breakfast—some eggs preserved with prussic acid, but not enough to show a symtom. A. Oh, that is impossible.

Q. Well, we'll say prussic acid in the eggs, then?

A. Well, you would not preserve the eggs with prussic acid.

Q. I don't know, I get confused.

The Court: We heard a good deal yesterday about eggs.

Judge Scarritt: Not about prussic acid in it.

By Mr. Butler:

Q. Well, I am not stating to him, so that we will assume that in no one of these is there enough, no one of these, I have mentioned five substances, for breakfast, customary foods for breakfast? A. Yes.

Judge Scarritt: Wait a minute, Doctor. Don't answer the question until I have an opportunity to object.

Q. But in no one of these there is enough to be characterized as a poison, or to show any poisonous observable effect. Now, then, we have under inquiry the subject of the propriety of the sellers of these things of adding a quantity to each. Now, with respect to the cantaloup, you could conscientiously swear, the quantity being told, and you being familiar with the action, that there was no poison added to that, couldn't you?

Judge Scarritt: We object to this question because incompetent, irrelevant and immaterial, and as having nothing to do with the issues in this case, it does not relate to any testimony in the case and is made for the purpose of misleading and confusing the witness and prejudicing the jury against the claimant in this case.

The Court: Objection overruled.

To which ruling of the court claimant then and there duly excepted.

The Court: You may answer the question.

Q. Now, will you repeat that question, I would like to, as I understand him—

The Court: No, answer the question; it may be read
1722 to you if you don't understand it.

A. Well, I would say you asked me the question there.

(Question read by the reporter).

A. You assume they have been added, don't make any difference whether they have been added or not?
Q. Yes, sir, assume that.

Judge Scarritt: Add to that objection that it is purely argumentative.

(Question read by the reporter.)

A. I will say yes, if we know they have been added, of course.
Q. You could swear that there was no added poison?
A. Oh, no.
Q. You would swear that there was an added poison?
A. Yes, we assume that.
Q. And you would swear to that no matter how minute the quantity?
A. Certainly, if it is assumed that it has been added, of course.

Judge Scarritt: He is talking about cantaloup.

A. I am talking about all of these things, if we start out with the assumption that these things have been added, if we start out with the assumption—
Q. Now, so that you will say that if there be prussic acid added to the cantaloup? A. Yes, sir.
Q. That the poison has been added even though the quantity of the prussic acid be so minute that no physiological effect can be observed, traced, or in any manner discovered, won't you? A. I would, yes.
Q. And so with respect to the coffee, the shredded wheat, the bacon and the eggs? A. Yes, sir.

The Court: Answer.

A. Yes, sir.
Q. You will say even though the quantity be infinitestimal, unweighable, if this exists, and you are asked to assume that it does, then you would say that a poison has been added to those foods?
A. Even a trace of poison hardly discoverable, if it has been added, of course would be a violation of the law.

Q. Now, then, say if it were strychnine your answers would be the same? A. Yes, sir.

1723 Q. What is that? A. Yes, sir.

Q. So if it were corrosive sublimate your answers would be the same? A. Yes, sir.

Q. And so if it were any poisonous substance, that is, any substance which might produce a poisonous effect observable, given or developed in appropriate quantities? A. No, sir.

Q. You would not? A. No, sir.

Q. So poison may be added which will justify you in swearing that no poison has been added?

A. Well, I don't understand that question.

Q. I thought you did not. So what you have said with respect to strychnine, prussic acid, corrosive sublimate—

A. Yes.

Q. You would say with respect to any poison?

A. No, no, I would not.

Q. What poisons would you make exception to?

A. Well, there is where we are coming to a misunderstanding at the very beginning with regard to the question of poisoning?

Q. Yes.

A. I say a question of poison is the question of quantity and in quantity I have reference there to the nature of the poison, for example, we may say that many of the innocent substances, as for example, vinegar could not be taken in the form of acetic acid, yet it could be added in a quantity that will be entirely innocent, and the same way with citric acid, and with many of those substances which would be in a concentrated form a poison, but in very minute quantities would not be. Now, if you apply that question to all persons, if the question is applied to corrosive sublimate and hydrocyanic acid, and so on, why of course you are leading into another field entirely, which deserves a separate consideration, in my opinion. I may be wrong about that.

Q. In your experience in the world and professional experiences, in common salt, common table salt, understood to be a poison in the ordinary use, in the English language, or vinegar? A. No, sir.

Q. Whisky is not either, is it? A. No.

Q. But we know it may produce injury? A. Yes.

Q. And may produce effect in one of these? A. Yes.

Q. Just poisonous in its character? A. Yes.

1724 Q. But that depends upon the excess of quantity?

A. Yes, sir, that is true.

Q. The effusion of the substance? A. That is right.

Q. But salt is wholesome, isn't it?

A. Yes, in proper quantities, of course.

Q. It is necessary to life?

A. Certainly, so is hydrochloric acid, is necessary, but it is a very strong poison, and its constituents are the same.

Q. Are nitrites necessary to human life?

A. I am not sufficiently conversant with the processes of life itself to say; as I have said before, the fate of nitrites, I have tried my best to ascertain the fate of nitrites.

Q. And you can't tell us?

A. And it is a question, and we are trying to get at the truth, so far as nitrites are concerned.

Q. I have no doubt. A. Yes.

Q. So you don't want to say about that; you have not qualified about that?

A. I could give you a whole lot of material relating to this, but it would not be just material to the case.

Q. I will not trouble you with it any further, Doctor, because I think you can. But loco weed is poison?

A. Yes,—well, no, sir.

Q. You told us it was?

A. Yes, sir, and no, sir, that is one of the strange things about loco; in some styles it is poisonous and in other styles it is not.

Q. I never saw that, but does that make the cattle crazy?

A. Yes, sir.

Q. Did you eat some of that?

A. I did. I guess that accounts for my demented condition this morning.

Q. Did it have any perceptible effect upon you?

A. It did not, so far as I know, perhaps.

Q. But it is well known to be a very dangerous thing to cattle?

A. Yes, sir, that is in some localities. I could give you a long lecture on loco that would last the court the rest of the term.

Q. I hope that won't become necessary in this matter. Now, your examination of bleached flour was for the
1725 purpose of determining what effect, if any, nitrite re-acting material had upon digestion? A. Yes, sir, yes.

Q. Was there nitrite re-acting material in the unbleached flour that you compared the bleached flour with?

A. No, sir.

Q. Well, isn't there nitrite re-acting material just as much in the unbleached flour as there is in the bleached flour?

A. It depends on circumstances again.

Q. Well, did you get some fresh flour from the mill that had not had time to take on these nitrites from the air that Professor Wesener told us about?

A. I don't know, except that I supposed we received—

Q. Well, you tested it for nitrites, didn't you?
A. Yes, sir, yes, sir.
Q. Now, was it new flour? A. New flour, yes, sir.
Q. It was new flour, I mean recently milled?
A. Yes, recently milled.
Q. Not naturally aged flour? A. No.
Q. So your experiments compared the bleached flour with the unbleached flour which had not been naturally aged?
A. Well, my experiments was with two flours, one labeled "bleached"—
Q. I don't care for the label; I want to get one particular point, now, and I want to get the fact if you know it; if not we'll have to go on without it. I want to find out this —you were not here yesterday, or for a day or two, were you, lately? A. No.
Q. The millers and bakers say that flour improves with natural aging some, wouldn't it?
A. Well, I have heard that.
Q. All of them say that it gets better, makes better bread, and changes chemically finer and nicer, and Professor Wesener told us that it takes on nitrites very nicely, the original nitrites, now, you got some bleached flour that had nitrites added by the bleaching, that was one kind, wasn't it?
A. I had a bleached flour that gave the nitrite re-action, yes.
Q. Now, you had an unbleached flour that did not give it?
A. I had another flour which did not give the nitrite re-action.
1726 Q. You understood it to be a freshly milled flour?
A. Well, I know in one case it was freshly milled because I collected it myself.
Q. Well, that is what I am getting at. Now, then, by the most careful examination you couldn't tell any difference in digestion? A. In digestion, yes, sir.
Q. Is that true? A. Yes, sir.
Q. So that if it is true that natural aging improves the digestibility of flour, and that bleaching is the same as natural aging, then the bleached flour ought to digest better, oughtn't it, because this is fresh flour, and therefore inferior to the bleached?
A. I can't say what ought to be and what ought not to be; I am only here to testify to facts, as my results are the only thing.
Q. I am not asking you about the result. Assuming the fact to be that flour was naturally aged, improves as to digestion? A. Yes.
Q. And assume that Professor Wesener is right that bleaching is natural aging, is the equivalent of natural aging, in the quality of flour—? A. Yes.

Q. And color too? A. Yes.

Q. Now, if those two things are true, and you take a freshly milled flour of the same kind of a bleached flour, the bleached flour ought to have digested first and better, ought it not?

A. I have not considered that.

Q. Well, consider it now.

A. Well, I will have to go into the laboratory and study that out.

Q. Well, we will not pause for that.

A. I am only here to testify to my results.

Q. Do nitrites produce methemoglobin in the blood?

A. I don't know, I have not experience from personal observation in the experiments I have made.

Q. Did you ever see methemoglobin?

A. I did, well, I have seen it through the spectroscope.

Q. Taken from the blood of a human being?

A. Yes, sir, I have seen it taken from the blood of a human being.

Q. When and where?

A. Oh, some years ago I saw the effects of methemoglobin.

1727 The Court: He is not asking you about the effects; he asked when you saw it.

A. Yes.

By Mr. Butler:

Q. When and where? A. I could not give the exact date.

Q. Where? A. In Ohio, a child died.

Q. Now, Doctor, I am not going into that, but where in Ohio? A. London, Ohio.

Q. Produced by nitrites?

A. Not nitrites, by nitrite material.

Q. Produced by nitrite re-acting material, is that the only methemoglobin you have ever seen? A. Well—

Q. In the spectroscope? A. Well, the spectroscope—

By Mr. Lyons:

Q. We can't hear you, Professor Sayre, at all, speak up.

A. No, I have not seen methemoglobin as a product, you mean in the blood outside, in a test tube for example?

Q. Well, I don't know where it could be seen at all, well, where? A. In a test tube.

Q. Yes, a representation made like the blood of an ox, we had here the other day, we have all seen that, that is another group, by the effect of nitrite of sodium, so that the only case that you ever did see methemoglobin was the case of this child in Ohio? A. Yes.

Q. And that was produced by nitrite re-acting material?

A. Yes, that was the substance.

The Court: You have anything to say, Professor, let's get along?

A. No, that is all.

Q. Now, so that there may be no misunderstanding again about our definitions, because that is where our disagreement all comes, when this nitrite re-acting material is present it will give the characteristic color on the application of the Griess test, the Griess-Ilosvay test? A. Yes, sir.

Q. So that is the thing we have been talking about there?

A. Yes, sir.

1728 Q. That is the color that was shown in the work of Professor Hulett here when he pumped it out of the bread and tested it here before the jury?

A. I didn't see that.

Q. You didn't see that test before the jury? A. No, sir.

Q. Well, didn't you see it in the color in the tube here in the courtroom? A. No, sir, I was not present.

Q. Now, there are certain—by the way, is nitric acid a poison? A. Yes, in a concentrated form.

Q. Is nitrous acid a poison?

A. In concentrated form, yes, sir.

Q. N2O is a poison? A. In concentrated form it is.

Q. NO23 is poison? A. In concentrated form.

Q. N2O4 a poison?

A. In concentrated form, all these substances.

Q. Yes, sir, go on.

A. All these substances if taken in quantity, in certain quantities, they will have a poisonous effect.

Q. NO2, HNO2, HNO3? A. Yes.

Q. N2O3, are these substances poisonous by nature?

A. In quantity in concentrated form.

Q. Nothing is poison except in quantity?

A. Yes, sir, that is right.

Q. But these are not harmless like flour, they don't fall in the flour class, but they fall in the poison group, don't they?

A. Yes.

Q. All fall in the poison group?

A. That is to say in concentrated form.

Q. No human being can tell how much poison of any given character it will take to kill another human being, can he?

A. Within certain limits.

Q. Oh, yes, but you couldn't tell exactly how much will break the thread of life?

A. It depends upon the body weight, the condition of the individual, and there are a great many.

Q. It depends on resistance, you mean?

A. Yes, sir, depends on resistance.

Q. You couldn't tell how much strychnine it will take to kill me? A. No.

Q. Just how much will be enough? A. No.

1729 Q. But you know that it will do it?

A. I know that a certain quantity will do it.

Q. You know that prussic acid will do it?

A. A certain quantity of prussic acid will do it.

Q. And very little? A. Beg pardon?

Q. And very little?

A. Well, you can take two minims or two drops.

Q. Well, that is a very little, isn't it?

A. Well, you can take two drops.

Q. That is very little, isn't it? A. That is little, yes.

Q. I want to know how much will kill me.

A. Oh, that is a question I cannot decide.

Q. But a very small amount will kill me?

A. Well, that is very indefinite, I can't say what a small amount is to you or a small amount is to me; now, we would disagree as to what a small amount is.

Q. How much prussic acid is considered a poisonous dose?

A. Well, that would depend upon the concentration of the hydrocyanic acid.

Q. Express it any way you see fit.

A. Two per cent hydrocyanic acid I would consider that a teaspoonful of that would kill, be a fatal dose, ordinarily, for the ordinary person.

Q. And the active principle of aconite, how much will kill?

A. Varying amounts, you know the active principle of aconite is a variable body, I can show you aconitin, the test of it is 1/240th of a grain, and some 1/60th of a grain, so that they are variable, aconitins are not uniform compounds.

Q. Is aconitin a pure body? A. It is an alkaloid.

Q. Is it a pure body?

A. Then we will have to come to an agreement as to what you mean by pure.

Q. Well, let it go. A. It is an alkaloid.

Q. Are there any compounds which will result in flour, which will be produced in flour, by NO2, HNO2, HNO3, or N2O3, which will not respond to the Griess test?

A. Naturally formed in the flour?

Q. Yes.

A. The elements of flour will not produce by itself, the elements of flour itself will not produce that substance NO2.

1730 Q. The flour will not make NO2 or HNO2?

A. That is to say—

Q. That is not what I asked you at all. I ask you if you treat flour with NO2, HNO2, HNO3 or N2O3, whether or not you will produce some compound in the flour—

A. If you should treat the flour with those compounds, or any of these compounds, you would have a nitrite re-acting material, is that what you mean?

Q. Yes, sir, that is one step. Now, it will also produce compounds which will not re-act to the Griess test, won't they?

A. The ultimate re-action would be, yes.

Q. Well, I mean it will not re-act directly to the Griess test? A. Yes.

Q. It will produce the nitroso-amin and the nitro diaso compounds and the Zanto-proteic action, won't they?

A. Yes, those are in part compounds, many of them.

Q. And these compounds will not respond to the Griess test, will they?

A. They will break down into single compounds.

Q. I mean they will not respond directly, they can be broken up and so manipulated that you can get the test, isn't that true, chemically manipulated, I mean?

A. Determined, you say, so as to in making the test?

Q. No, but I say the nitroso amin, the nitro amin, the diazo compound cannot be located by the Griess test, can they, if so, how, we want to find them?

A. I am not prepared to answer that question.

Q. Well, you know what the poisonous yellow proteic re-action is? A. Yes, sir.

Q. That flour is poisonous, isn't it, when the zanto re-action has taken place by treatment of the flour with NO2, HNO3, and HN2O3 or any or all of them?

A. I would not like to testify to what that is, because I have not performed any experiments.

Q. Well, I know, but you know in the nature of things, and it is common knowledge, is it not, by every gentleman of cultured education that the zanto-proteic re-action is a poisonous re-action and that the product is poisonous in its nature, that is true, isn't it?

A. It depends on concentration, as I said before.

1731 Q. I know, the concentration, so that it is yellow like sulphur, that is poisonous, isn't it?

A. I would have to experiment with that myself in order to say positively in regard to that; I have performed no experiments with the zanto-proteic flour.

Q. Don't you know any poisons without having taken them yourself?

A. I know poisons certainly by records that are made, yes.

Q. But, now, isn't it the general knowledge on the subject that the yellow re-action on the proteids of flour resulting from the use of HNO3, HNO2 or N2O3, that it is a poisonous substance?

A. Well, the same answer would be given to that as before.
Q. You don't know?
A. It depends on the quantity and dilution.
Q. Well, I will say take that quantity.
A. I don't know what there is there.
Q. In flour treated with nitric acid?
A. I don't know how much there is there.
Q. Can you tell whether it is wholesome or not by looking at it?
A. I couldn't tell anything about it.
Q. Can you tell whether it is deleterious or not?
A. Couldn't tell anything about it.
Q. Can you tell us it is poisonous or not?
A. Couldn't tell anything about it because I haven't—
Q. That is all, that ends it. Is it not generally understood that the nitroso-amin and the nitro-amin and the diazo compounds are injurious to the quality of flour when produced therein by nitric acid?
A. The same question, that is, that depends on quantity.
Q. Well, is it not generally understood—we will say you get the nitroso-amins produced by nitric acids, the nitro-amins and the diazo compounds, isn't that generally understood to injure the flour, I am not now speaking of poisons, but of the injury to the flour?
A. Yes, I understand, but I don't believe it is generally understood as being deleterious to the flour.
Q. Will you express the contrary that it is not?
A. I won't express any opinion exactly.
Q. You don't know. Are you familiar with Swedelberg's Work on Pharmacology?
A. I know of it, I am not familiar with it.
1732 Q. Well, isn't he professor at Kaiser Wilhelm University at Strasburg, the greatest living pharmacologist and acknowledged by all to be the greatest pharmacologist who ever lived?

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial, and one expert passing on the qualification of another expert.

The Court: He may answer.

Q. You are not a pharamacologist at all? A. No, sir.
Q. Now, do you consider nitrite of sodium as food?
A. Never used as a food.
Q. What is that? A. Never used as a food.
Q. Do you consider it a drug?
A. Nitrite of sodium is a drug, yes, sir.
Q. So then, if nitrite of sodium is added to flour by the bleaching process drugs are added to the flour?

A. Nitrite of sodium, if nitrite of sodium is added to the flour.

Q. A drug is added to the flour?

A. A drug is added to the flour.

Q. Well, so much for that. There is some sodium in wheat flour, isn't there?

A. Yes, sir, sodium is contained in flour, as potassium and magnesium and alkali, the alkalis are present in flour.

Q. Is nitrite of potassium a drug? A. Yes.

Q. Is nitrite of calcium a drug?

A. Nitrite of calcium is not there.

Q. I am not speaking whether it is there or not. Does it exist?

A. Oh, it is a chemical substance.

Q. It is a chemical substance?

A. Yes, a chemical substance.

Q. Is the nitrite of magnesium a drug?

A. Any nitrite would be a chemical substance.

Q. If the bleaching process adds nitrite of magnesium or sodium or calcium or potassium to flour, it adds a drug to the flour, or a chemical, doesn't it?

A. That is an assumption that I would not like to make.

Q. Well, I am asking you to make this assumption, to
1733 assume that the treatment by the process does impart to the flour and cause to exist therein nitrite of sodium, nitrite of potassium, nitrite of calcium and nitrite of magnesium? A. Yes.

Q. Now, assume that to be the fact. A. Yes.

Q. Now, understand, of course, that expert witnesses are not responsible for the assumptions but give their opinions on the assumptions? A. Yes.

Q. Now, assume that to be true, denying any responsibility for the assumption? A. Yes, yes.

Q. If it is true then, do you not say that drugs or chemicals have been added to the flour?

Judge Scarritt: I object to that as not based on the evidence in this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. No, not in the way in which you put it, no, sir, don't add nitrite of sodium, nitrite of magnesium, nitrite of potassium, and so on, to the flour.

Q. No, but I ask you to assume that to be the fact, assume that in truth and in fact the bleaching process, we will call it Mr. Watson's process, the Williams' process; is that the

name of yours, or the American—the Alsop here at this time adds it to flour by chemical combination with bases therein?

A. Yes.

Q. Nitrite of magnesium, nitrite of sodium, nitrite of potassium and nitrite of calcium, I want to ask you if these substances are drugs or chemicals?

Judge Scarritt: I object to that, he starts out with an assumption, then asks another question, I object to the question because it is not based on any evidence in this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. If these substances are eliminated under the proc-
1734 ess by baking, I would say no.

Q. Well, I am not talking about the baked product; I am talking about the flour.

The Court: Now, Professor, you are not responsible for the assumption, but assuming these things to be true, then what?

Same objection by the claimant.

A. Assuming then that the nitrite radicles, as we would call it, perhaps, combines with the magnesium, potassium and so forth, or the alkali and the alkaline nitrites contained in the flour, assuming that there is a combination there, that is, a permanent combination, why, of course, yes, assuming that there is a permanent combination.

Q. Now, let's get this radicle business; that is to say nitro radicle is the NO23? A. Nitro radicle is the NO3.

Q. The nitrous acid is the NO? A. Yes.

Q. NO2? A. Yes.

Q. Is the gas nitrogen peroxide. Now, K stands for potassium, doesn't it? A. Yes, sir.

Q. What stands for sodium? A. Na.

Q. Na for sodium, like that, is it? A. Yes.

Q. What for calcium? A. Ca.

Q. Ca for calcium. What for magnesium? A. Mg.

Q. Now, then, nitrite of potassium would be KNO2?

A. Nitrite, yes.

Q. Just take there this radicle and add it to that base.

A. Yes sir.

Q. The NO2, right straight down like that?

A. Now, you have got it, yes, sir.

Q. Now, that is the four nitrites?

A. Those are the four nitrites.

Q. Now if we were not trying a bleached flour case at all, and I wanted to get your report, and asked you what kind of a substance KN2 was, would you tell me it was a drug or a chemical?

A. Yes, I would call it a drug.

1735 Q. If I asked you what NaNO2, if we were not in the bleached flour case, Alsop had nothing to do with it when you say it was a nitrite of sodium, a drug? A. Yes.

Mr. Elliott: I object to the assumption that this witness would say something else if this Alsop process was in it.

Mr. Butler: He said it might be baked out every time I mentioned flour.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. If CaNO2 were shown to you by your students, and you was asked if that was a drug or a chemical what would you say it was? A. A chemical, the only distinction between—

Q. Now, let me get this, drug, drug, drug, chemical, chemical? A. Yes, sir.

Q. Now, in all flour there is some of each one of these bases, isn't there, potassium, sodium, calcium, magnesium?

A. Yes, sir.

Q. Isn't there? A. Yes, sir.

Q. Each one of these bases shows great avidity for the radicle of nitrous acid and of nitric acid, isn't that true?

A. Yes.

Q. And they readily combine? A. Yes.

Q. So that you would also have in there the KNO3, wouldn't you, NaNO23, CaNO3 and magnesium NO3, wouldn't you, nitrous acid or the nitric acid combining, that is the radicle, the NO3 for nitric acid combining with this base, will give the nitrites of sodium and potassium, calcium and magnesium?

A. Yes, sir.

Q. That is known to every student in elemental chemistry, isn't it?

A. Yes, sir, you are assuming, of course, that combination takes place?

Q. That is, no, I am proving it takes place by you, when you bring nitric acid into contact with potassium, sodium, calcium and magnesium you make nitrite of each, do you not?

A. I have not determined that.

Q. Don't you know that as a chemist?

1736 A. Tested in the test tube.

Q. I am not talking about that.

A. Yes, if you made up—if you put it in the test tube.
Q. And if you treated it with NO2 gas? A. Yes.
Q. The radicle of nitrous acid, you will get the nitrates, won't you? A. Yes, sir.
Q. And that law is certain, is it not?
A. As chemical laws are all, yes, sir.
Q. As certain as the law of gravity, chemical re-action is, isn't it, chemistry is an exact science like mathematics, isn't it? A. Yes.
Q. Now, then, see if I state this correctly, not about flour, now— A. No, I understand.
Q. Given a mass of organic material and inorganic material mixed together, complex in character, flour is complex in character, is it not? A. Yes, sir.
Q. Organic matter and inorganic matter mixed together, is it not? A. Yes, sir.
Q. Now, we have some potassium, some sodium, some starch, some proteid, some oil, some coloring matter, terpin—are you familiar with the substance known as terpin, this new terpin that Wesener— A. I am familiar with terpin.
Q. Are you familiar with the new one that Wesener found, terpins are colorless, all up till the time Wesener found one, terpins were generally colorless and turned yellow with time, but Wesener found one—

Mr. Elliott: Dr. Wesener.

Q. Dr. Wesener, Professor John A. Wesener, Dr. John A. Wesener found one that was naturally yellow, but turned colorless; are you familiar with that one?
A. I am not familiar with terpins except to know their composition.
Q. Well, did you ever hear of that one that he discovered?
A. You have just spoken of that.
Q. Did you ever hear of it before? A. No.
Q. Then I will not put that in my problem, now. But
1737 to the mass containing sodium and potassium and starch and protein and oil and water, all in the presence of moisture— A. Yes.
Q. There is added the radicle of nitric acid, that is NO3, is it not, and there is not enough of that radicle to satisfy each of the bases, or to follow—use each of the bases in combination, is it not a law of chemistry that that radicle will distribute itself to each of the bases?
A. The law of chemistry is that the law of affinity that the nitric acid will combine with the elements with which it has the greatest affinity in that compound, whatever that is; if it has the greatest affinity with this assumed terpin, why, of course, it would combine with that, if the terpin would be suffi-

cient to satisfy it, then that satisfies it; but the law is, in my opinion, that the nitric radicle would combine with the element with which it has the greatest affinity, now, I am not competent to say—

Q. Is that the law of mass action?

A. I am not competent to say as to which one it would select; I haven't any proof of that, and I am only competent, as I said before—

Q. I want to ask you if it is not an elementary law of chemistry known as the law of mass action— A. Yes.

Q. That, given a complex mass with various bases and moisture— A. Yes.

Q. That nitric acid or the radicle from nitric acid will combine not with one, but distribute itself to each and to all of the bases for which it has any affinity, and that the amount of chemical action with each depends upon the mass of it and affinity. Now, isn't that the law of mass action known to students, one of the elementary laws of chemistry recognized everywhere in the elementary textbooks?

A. We believe in the law of mass action.

Q. Yes. Now, that is the law of mass action that has been taught since chemistry has been taught, that is, in all of the elementary textbooks, isn't it? A. Yes.

Q. That is used by your university? A. Yes, sir.

Q. That is true, isn't it? A. Yes.

Q. So, now, if we leave out of flour the terpin that Dr. John A. Wesener has found, leave that out, but we have
1738 sodium and potassium and starch and protein and oil, then if the law of mass action as it is defined in the textbooks of chemistry applies, the combination will be a nitrite of each of them, depending upon the mass of each and the strength of the affinity of nitric acid for each base; now, isn't that true and just as certain as the law of gravity?

A. You would say than that—

The Court: No, no.

A. In order to get my understanding of your question—

The Court: Oh, answer the question and let's get on.

A. Yes, sir, as you have explained it, it would.

Q. Yes, sir, that is all there is to that. Now, in your digestion experiments you tested the digestibility of the starch, did you? A. Yes, sir.

Q. Did you of the oil? A. No.

Q. Of the proteins?

A. No, sir, except in the peptic digestion; I did not take a quantitative of the peptones because I had not time, and Professor Willard worked it out thoroughly.

Q. Is raw starch digestible in the pancreatic?

A. It has to be prepared to digest.

Q. Well, I mean is raw starch digestible in the pancreatic fluid? A. Raw starch?

Q. Yes, sir.

A. No perceptible extent, it has to be prepared.

Q. Is it with saliva—raw starch?

A. No, it has to be converted.

Q. You made your experiments on flour and not on bread?

A. On both, of course, in flour it would have to be dissolved first.

Q. I understood you to say that you found there was no difference in the digestibility, that your conclusion was there was no difference in the digestibility of the starches?

A. Of the flour?

Q. Of the flour? A. Yes.

Q. Now, do you limit your conclusion to that?

A. Yes, sir, that is all I can testify to.

Q. I don't want to take you outside with respect to your own work? A. Yes.

1739 Q. Your work went to starches?

A. Yes, sir.

Q. And it took in saliva, gastric and pancreatic?

A. Pancreatic, yes.

Q. And pancreatic digestion and the saliva digestion are the same?

A. Yes, sir, well, so far as the diastase is concerned, the pancreatic diastase act similar to that.

Q. Starch is not a flesh making substance; it is simply a heater, in fact?

A. Yes, it produces heat.

Q. Now, do you hold, Professor Sayre, that the fact that you observed or believed that you did, namely, that bleached bread flour not impair the digestibility of the starch, according to your test, proofs, that the flour is not deleterious to health?

A. It is one of the proofs—

Q. Well, now, don't misunderstand me, of course the digestibility of starch might not be impaired at all, and still the food injured, am I right about that? I am not now speaking of that. I will speak of the food, not a flour, to get away from that, take a food consisting of starches and proteins and oil; now, may the food be injured and rendered deleterious to health without impairing digestibility of the starch; do

you understand what I mean exactly; I want you to understand it exactly? A. Yes, sir.

Q. To-wit, does the fact that one element, namely the starch, is not rendered less digestible, prove that the food is not injured or made deleterious? A. No.

Q. No, that's it; so that is true in flour, isn't it, Doctor?

A. Yes.

Q. So that your investigation, giving full credit for proper methods, faithful results and faithful recounting of them, will not be sufficient of itself to prove that the food was not injured and was not deleterious to health, would it?

A. No, that must be taken in connection—

Q. That would be one step, yes. A. Yes.

Q. Your idea would be that it was sufficient to prove that the starch was not poison or rendered injurious to health or less digestible, that is your idea?

A. That is one of the tests for determining whether the—

1740 Q. That is just one element. Now, before you can reach the conclusion that the food is not poison or deleterious or injured, similar proof would have to be shown as to each of the elements?

A. Each of the elements of the flour.

Q. Of the food, yes, sir, flour or bread or whatever it is?

A. No.

Q. It would not? A. It would not.

Q. What one is there then, is there any case in which you can take one element of a complex substance and examine it, and prove that the food has not been impaired as to value, made deleterious to health, or poison?

A. Yes, that was—

Q. Your one element in flour will prove that?

A. To me the investigation, of course, was confined to the flour, the starch of the flour. As I stated in my direct examination, that if anything deleterious had been added it would show itself, in my opinion, upon the starch digestion.

Q. Oh, yes.

A. Because that is a very delicate re-action, and my knowledge of ferments would show, would bring that out.

Q. What effect upon proteids and starch has NO2 gas diluted with air?

A. It has the effect of bleaching it.

Q. Well, let's see, so it is bleached first, let us see, we have extracted the terpins first? A. Yes, sir.

Q. Then what effect will it have?

A. If it is overbleached, that is, you mean if it is overbleached?

Q. I don't mean anything of the kind; I mean just what I say; it has not been bleached at all, but we have extracted the terpins, bleached it first, taken it out, not by bleaching process, but taken it out. A. Yes.

Q. Separated it, isolated, taken that away, then what effect would NO2 have on it?

A. I have not tried that particular experiment.

Q. Now, what effect does NO2 have on flour?

A. I have not tried the experiment of NO2 on flour.

Q. Do you think it is true, as stated in the patent in
1741 this case, that is increases the water content of the flour?

A. I never made any determinations in that particular.

Q. Do you know it is true that it doubles the gluten or the proteids, and so forth?

A. Never made any quantitive determinations in that particular.

Q. Is there any way known to chemistry or to science to convert starch into proteids?

A. Well, a great many things are possible, but I am not up on that question.

Q. The patent in this case says that the unbleached flour contained, I will not give the decimals, but 13 per cent of proteids, and so forth; the same flour if bleached contained 26?

A. Yes, sir.

Q. Did you yourself in your examination of the flour notice an apparent increase of the proteids—proteids are altogether the most valuable, are they not?

A. No, I did not examine that.

Q. Can you tell us whether or not that would be chemically possible, sir?

A. Well, when they can build up albumin from carbon alone I am not prepared to say.

Q. Tell us how they can build albumin from carbon.

A. No, I never done it.

Q. Was it ever done? A. Well, it is so reported.

Q. By whom?

A. By statements among the chemists that it had been performed.

Q. Can you give us a reference so we can look that up?

A. I am not stating that as a fact.

Q. No, but are you stating it that it is reported as a fact?

A. Yes.

Q. Where? A. Well, I don't know.

Q. By whom? A. I don't know.

Q. Where did you see it? A. Oh, I heard about it.

Q. Now, here is a report in the patent that is in evidence in the case, and I want to ask you whether or not you think it is true, whether you think it is possible to be true. "The

untreated flour showed the following constituents and proportions named: Water, 9.84, starch, etc., 74.11; proteids, etc., 14.99; ash 0.44; fat 0.62. The flour which had been
1742 treated by my process showed the constituents in the following proportions: Water 10.13,—a slight increase, you will observe; starch 62.24—a decrease of over 12 per cent of the total; proteids, etc. 26.71—an increase on proteids of over 12, a little less than 12; ash 0.30—a decrease of the ash; and the fat remains unchanged 0.62; so it will thus be seen that the flour which had been treated showed an increase of 11.72 parts of proteids, and a decrease of 0.14 parts of ash and of 11.87 parts of starch, an increase in the proportion of the proteids relative to that and the other constituents of the flour, especially of the starch and ash, is a highly advantageous result, as flour having such proportion of proteids is of course far more nutritive than the ordinary flour of commerce." Now, as a chemist are the results reflected in that statement possible?

Judge Scarritt: We object to that as incompetent, irrelevant and immaterial.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I would have to accept that on the evidence of good authority. I never performed that analysis. Those statements, all such statements, we have to depend on such statements from the authority and would have to go over his ground and have to go over the work myself in order to testify here under oath as to what my opinions are.

Q. All right. Now, let me ask you this question. We are given here an agitator full of flour—you have seen the Alsop bleacher?

A. I have seen the process of bleaching flour, and I have conducted—

Q. Now, the best chemical authority in the world, we will say, told you that that treatment increased the proteids of that flour over 12 per cent of the total, nearly doubling the proteids, would you accept that as the truth, if all of the chemists that you ever saw told you that?

Counsel for claimant objected to the question as absolutely incompetent, irrelevant, immaterial and having nothing
1743 to do with the issues in this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. As a chemist I would go over the ground, as I have said before, to ascertain the truth of that statement.

Q. All right. Now, in your digestion experiments would not your digestion experiments disclose to you the difference in the quantity of the starch; now if this Alsop bleaching reduced the starch 12 per cent of the total, you don't have a comparable basis at all, do you?

A. That is comparable, yes.

Q. Well, now, let's see; did you find that the bleached flour was short in starch?

A. I simply, as I said, performed these experiments side by side.

Q. The same kind of flour?

A. The unbleached flour the same kind and the bleached flour the same kind—

Q. Go on, I didn't intend to interrupt you.

A. Well, I tested the unbleached flour and the bleached flour side by side, I have stated that, I think, clearly, and watched the process of its digestibility, the two flours, the digestibility of the two flours, comparing the two flours.

Q. Professor, I am very sure that I did not make myself understood; what I was trying to make myself ask you was this, this patent tells us that by the bleaching process the amount of starch is reduced about 12 per cent and the amount of proteids increased about 12 per cent; in your handling of the bleached flour and unbleached, in making your digestive experiment of the starch alone, as I understand? A. Yes.

Q. Did you observe that difference?

A. I did not observe any difference.

Q. In the starch? A. The digestibility of the starch—

Q. No, I mean in the quantity of the starch? A. No.

Q. In like amount of flour, did you make any determination?

A. No, did not make any starch determination, no.

Q. Now, if it is true that the bleaching of the flour took out 12 per cent of starch and put in 12 per cent of proteids, would not that interfere with your test because you would have 12 per cent more of starch in the same quantity of flour in one case than you did in the other?

1744

A. Yes, sir.

Q. Well, now, would not that interfere with your results?

A. Well, that would be all paper chemistry, I couldn't tell from that, just simply I would have to go over the ground.

Q. Well, very good, I don't want to embarass you, but suppose there was in one sample of the flour, you took like quantities of flour, bleached and unbleached, did you take like quantities? A. Yes, like quantities.

Q. Now, suppose one had twice as much protein as the other, would that interfere with your experiment?

A. Oh, yes, of course the different flours if they were constituted differently, of course—

Q. That is what I meant.

A. If it were differently constituted, yes.

Q. And if it is true that the bleaching process reduced your starch so that one would have less than the other, that would render your experiments worthless, would it not?

A. We could have to—I cannot admit that any assumed conditions would render the experiments such as I have used, worthless.

Q. Well, impair its value, then, as evidence to support your conclusion?

A. If I compared it, if I compared the two different flours that had different compositions and unlike conditions, of course, that would not be reliable.

Q. Now, if it is true that the bleaching reduced your starch 12 per cent and you didn't know it, but assumed that it had just the same proportion of starch as the unbleached flour— A. Yes.

Q. Would that impair the value of your result?

A. I would like to answer that in this way, that if I should get that phenomenon that you speak of, that is to say, if I should have a flour which had been treated as you say, and the gluten had been, of course, as you say, and the pancreatic digestion would be similar, I would have to go further to find out the reason for that.

Q. Yes, but if [my] mistake, we will say, that you got one flour that had 12 per cent less starch than the other and
1745 doubled the gluten, then your experiment would be valueless?

A. Yes, if you had a flour that had that difference in constitution, now, understand—

Q. Now, that is all. A. That is right.

Q. Now, logically and as a scientific gentleman, isn't it also true that if as Mr. Alsop has stated in his patent, the bleaching by the Alsop process does reduce the starch 12 per cent of the total and increase the proteids 12 per cent of the total, thereby doubling the proteids, that also it would be true that they could not be compared in the method that you compared them in your experiments? A. Yes.

Q. Isn't that true?

A. The assumption here is one that I am not at all familiar with.

Q. No, you are not responsible for that?

A. No, I am not responsible in any way, and I could not make any statement here to the jury with regard to that, if the digestibility were the same it would be, as I said before, be submitted to further investigaton. Now, there is a possibili-

ty by which the digestibility would be modified by nitrites, and I would have to consider the cause of that.

Q. We will call that a pound of flour? A. Yes, sir.

Q. This is another pound of flour? A. Yes, sir.

Q. Is this one-eighth, the proteids, we call that P up there, in this one-quarter is starch? A. Proteids.

Q. Here is our starch in this 75 per cent is starch; in this 60 per cent is starch. Now, according to your test, now, we will say that this was bleached by Alsop, this has never been made, understand, but we will just assume this for your scientific opinion, and it was changed from that then to this, and you compare the unbleached with the bleached, would your method then fairly disclose the relative digestibility of the starch?

Judge Scarritt: We object to that because it is admitted that it is not according to the evidence, and has never been done.

The Court: He may answer.

To which ruling of the court claimant then and there
1746 duly excepted.

A. Would discover the relative digestibility of the flour.

Q. Well, you are only digesting starch?

A. Yes, the diastasic digestion, the starch, the pancreatic digestion—

Q. Does the correctness of your conclusion depend upon the identity of quality of the flour in constituents and everything else?

A. My comparison here of the flour is simply on that of digestibility, as I have said, on digestibility. Of course, if you want to ask the question whether a smaller amount of starch will be digested and a larger amount of starch will be digested, of course—

Q. In making your experiments which you reported to Mr. Elliott did the justness and usefulness and reliability of your conclusion depend upon the fact that you had the same kind of flour, one bleached and the other not bleached?

A. Yes, that is that part of it.

Q. Did it depend upon the fact that one had the same amount of starch as the other had?

A. No, it depended upon the rapidity of the digestion.

Q. Did it depend upon the fact that one had the same amount of proteids that the other had?

A. It depended upon the rapidity of the digestion.

Q. So that you say that your methods as detailed by you here would disclose the relative digestibility of starch, wheth-

er one had more starch than the other or one had more proteids than the other? A. Yes, sir.

Q. Is that true?

A. The only point is the question of inhibition.

Q. Do you answer my last question affirmatively, do you say it would? So that your methods that you have described here, would give truthful results, no matter whether one had any proteids or not, and no matter whether one had any starch or not?

A. I am not assuming anything of that sort.

Q. Well, but I am not asking you to assume anything; I am asking you to tell me if somebody had come along and taken out half the starch out of one sample by bleaching it,

1747 I am asking you whether that would get the truth on your results or not; can't you answer that?

A. I want to have a concrete statement of something that I can understand and something that I can answer.

Q. Well, take this concrete statement—

A. And I don't wish to answer a question that assumes a lot of material there that I cannot qualify, I have not qualified to answer, and am not competent to answer any question—such cross-examination.

Q. Then tell me you don't know then, assume that this flour that was bleached had by the bleaching process one-half the starch destroyed, and converted into proteids, would that affect the verity of your conclusions?

A. My conclusions were, I don't believe, rendered invalid by any such consideration.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: Yes, sir, that is stricken out.

To which ruling of the court claimant then and there duly excepted.

(Question read by the reporter.)

A. Well, my conclusions were not based on anything of that sort.

Mr. Butler: In order to save time and for yourassistance when you come back this afternoon I will ask you one question, and that will be this question, to detail your method as to weight, method of treatment of the flour in each of the experiments that you detail and do it with such scientific exactness that you are willing to have it published as your report, and then tell me whether or not if bleaching destroys half the starch—

A. Well, I would like to perform the experiments here if it is necessary.

The Court: That question will be asked you after the lunch hour.

At this point a recess was taken until 2 o'clock P. M.

1748 Pursuant to adjournment court met at two o'clock P. M. Thursday, June 23, 1910, and proceeded with the trial of said cause further as follows:

Professor Sayers, resuming the stand, was cross-examined further by Mr. Butler, and testified as follows:

Q. Professor Sayers, I think I can shorten, even, the request I made just when we adjourned, when I asked for the details of your experiments, by asking you to answer four or five questions, and so that you and I will understand each other definitely—

A. (interrupting) I suppose we misunderstood each other, I don't know.

Q. (continuing)—I have taken the liberty of writing out the questions, and I will hand you a copy of them. There are five in number (handing the questions to the witness). The first one is, in your digestion experiments, did you, before digestion, determine how large the amount of starch and proteids or fat, or moisture, in each quantity of flour used, and if so how much in each? A. No, sir, I did not.

Q. Second, after digestion, did you determine the amount of starch left, or sugar produced of proteid, or fat, or moisture remaining, and if so, how much of each?

A. I did not, except in a few experiments with the sugar.

Q. Third, do you know any method for determining the extent of proteids digested? A. No, sir.

Q. You know no method?

A. Oh, yes, I know,—excuse me. Do I know of any method determining the extent of proteids? A. Yes, sir.

Q. You say no, sir, to that? A. Yes. I do.

Q. What method do you know? I mean, proteids in flour.

A. Well, by the determination of the end products of that digestion—the products of digestion, it would be the

1749 Kjeldahl determination of the nitrogen, is considered as the most accurate method. I did not have time to determine.

Q. You never did that?

A. Oh, yes. I determined nitrogen, but I did not determine that, in this case, no, sir. I have said that I did not determine the proteid digestion. Is that the point?

Q. Yes. You made no determination of the proteid digestion?

A. Except in that one case. Not quantitative determination of the proteids, no, sir.

Q. In determining the amount of nitrogen in the digestion solution, you will also include the nitrogen found in a whole lot of bodies which are not proteids, won't you?

A. Yes. I did not determine the—

Q. (interrupting) The nitrogen determination, then, is no good to determine proteids?

A. Of course, we have to assume that the nitrogen contents—nitrogen constituent in two flours, would be the same, of course, and any increase in nitrogen, would be the amount of—

Q. (interrupting) But there is nitrogen in starch, isn't there?

A. No. Nitrogen in starch? In flour, you mean? Yes, sir.

Q. What is the formula for starch? Any carbon—

A. Hydrogen and oxygen.

Q. No nitrogen?

A. No, sir. It is what is known as a carbohydrate.

Q. Did you use chloroform, or anything of that sort, in the digestion fluid? A. No, sir.

Q. Did the air have access to the beaker, or other vessel in which digestion took place?

A. No, sir. It was performed in an asphalt thermostat water bath, in which the vessel was stoppered, and the vessels rotated in this bath.

Q. Was any air in the vessels holding the digestive fluid?

A. That is, in the digestive fluid, you mean?

Q. Or, in contact with the—

A. (interrupting) During the digestion, do you mean whether there was any air above? Yes.

Q. So, then, the digestion fluid was exposed to air?

A. Yes.

1750 Q. Air has oxygen in it? A. Yes, sir.

Q. Nitrites, oxidized, become nitrates? A. Yes.

Q. Is that right? A. Yes, sir.

Q. So, then, these digestion experiments took place in the presence of oxygen, in the air?

A. Yes. In atmospheric air, yes, sir.

Q. Digestion in the body takes place in the absence of oxygen, does it not?

A. Well, I am not a physiologist enough to trace out that.

Q. You know, do you not, that it is true that the nitrites are not nitrated, during the process of digestion, but that, on the contrary, there are present substances which have the tendency, and which do, in fact, reduce nitrates to nitrites?

A. I admit that, certainly, that they are reducing substances, yes, sir, certainly.

Q. They are reducing substances, and not oxidizing substances?

A. Yes, sir. We are now talking of nitrogen compounds. They are reducing processes, going on in the case of—

Q. (interrupting) Nitrite of sodium readily reduces to a nitrate of sodium?

A. Oh, that would not be correct. You do not mean to say—

Q. (interrupting) Or, oxidizes?

A. You just mean the reverse, don't you?

Q. Yes. A. Yes.

Q. Upon exposure to the oxygen of the air, then, you may take a much larger dose of it, after it is oxidized, to some extent, can't you? A. Yes.

Q. And if you will fully oxidize it, the nitrate, itself, becomes relatively harmless. Isn't that true? A. Yes, sir.

Q. Take a whole handful of it, then, probably?

A. Well, I haven't taken a whole handful of nitrite, or nitrate, and I don't wish to make any assertions further than this, that—

Q. (interrupting) Are there bacteria which change nitrates to nitrites? A. Yes, sir.

Q. And conversely?

1751 A. There are bacterial changes going on, and the tendency, in the case of the nitrates, as I understand it is —I am not a bacteriologist, understand, now—as I understand it the tendency in the case of nitrate, is in the presence of bacteria, to reduce them to lower oxides of nitrogen. Understand, I have not performed any experiments on that line.

Q. Well, now, if you were to use chloroform, you would eliminate the danger of bacterial action, and would not have affected your enzymic action, at all? Isn't that true? Chloroform would stop the bacterial action, but would not affect the enzymic action?

A. No. Chloroform is not said to affect the enzymic action, yes, sir.

Q. So, your methods did not eliminate the danger of bacterial action? A. No.

Q. Now, I think, inadvertently, perhaps, this morning, I did not get everything just right, that we marked on the board, here. C10H16 is the terpene. That, you did not have anything to do with?

A. C5H8 is the basis, as I understand it of the terpenes, and of course we have C10H16, and C15H24, and so on. They are multiples of C5H8.

Q. But this is the formula?

A. This is the true formula.

Q. This is the formula Dr. John A. Wesener gave us?

A. Yes, sir.

Q. For the terpene?

A. That is the general formula for terpenes, yes, sir.
Q. But you never heard of a yellow terpene before, did you, before I told you about it this morning? A. Let me see.
Q. You never heard of this discovery of Dr. John A. Wesener?
A. No. I am not so familiar with terpenes as to say that there could not be a yellow terpene.
Q. You do not know? A. No, sir, I do not know.
Q. That is the way I understood it. It was news to you?
A. Yes, sir.
Q. Now, N2O3. We had that in the poisonous group this morning, but that is nitrogen trioxide, isn't it? A. Yes, sir.
Q. And that is known in a colored bluish liquid, isn't it?
1752 A. Yes, sir, it is a colored liquid, yes.
Q. N2O is nitrogen peroxide? A. NO2.
Q. NO2? Yes. I misspoke myself. A. Yes.
Q. N2O is laughing gas, isn't it? A. Yes.
Q. HNO2 is nitrous acid? A. Yes.
Q. HNO3 is nitric acid? A. Yes, sir.
Q. But NOCl is nitrosyl chloride?
A. Yes, sir. N-i-t-r-o-s.
Q. "X" I have got it. That will do just as well as "s". Is it spelled "x"? A. No, sir.
Q. Now, potassium nitrite is KNO nitrite, to, is that the way to write it?
A. That is right.
Q. Sodium is NaNO2? A. Yes, sir.
Q. What is the other one—calcium? A. Yes, sir.
Q. CaNO2?
A. Yes, sir. Calcium is of the bivalent character.
Q. Ca(NO2)2? A. Yes, sir.
Q. And the other was magnesium? A. Yes, sir.
Q. Mg—is that the bivalent, or single?
A. I don't know of magnesium nitrite?
Q. Nitrite.
A. Yes. Nitrite, I presume it would combine in the NO2.
Q. In the bivalent form? A. Yes, sir.
Q. Mg(NO2)2. Now, in chemistry, the "K"—the metal, would be called the base? A. Yes, sir.
Q. And the NO2 parts would be called the radical?
A. Well, we—
Q. (Interrupting) I mean, before the combination.
A. Yes, sir.
Q. And, when they are combined—
A. (Interrupting) They are called the acid radical.
Q. Now, in the same way we might make nitrates upon each one of these bases? A. Yes, sir.

Q. By combining the NO3. Is that [tight]?
A. Yes, sir.
Q. And these are inorganic substances?
A. Those are inorganic substances, yes, sir.
Q. Now, when we come to the organic substances—the proteids, and different constituents of the flour, act as bases?
A. Yes, sir.
1753 Q. And that becomes organic chemistry, then?
A. Yes, sir.
Q. And it is very difficult and involved, to write the base, and the combination, isn't it? A. Yes.
Q. But they form various organic compounds?
A. Correct.
Q. And those that would take the nitrous radical would be the organic nitrites? A. That is right.
Q. And those which would take the nitric radical would be the organic nitrates? A. Yes, sir.
Q. Breaking up into a great variety of forms, of the most difficult combinations to remember? A. Yes.
Q. And some quite hard to understand? A. Yes.
Q. And, among organic nitrites, there is known a nitrite called the amyl nitrite, isn't there? A. Yes, sir.
Q. That is known to druggists and to medical men?
A. Yes, sir.
Q. And is taken by inhalation, as a rule?
A. Yes, sir.
Q. And a drop or two is—it volatilizes very readily, too, and a drop or two is sufficient to give you a full medicinal effect, or nitrite effect?
A. That is right, yes, sir.
Q. Whether that is formed in flour or not, you do not know?
A. No, sir.
Q. Whether it is formed by Alsop's bleacher, in flour, you do not know?
A. I am not competent to testify as to that.
Q. I think I will write one more reaction, If I can. I had this on the board once before, but, as it relates to another bleacher—suppose we have this NOCl, the nitrosyl of chloride, and bring it into contact with water, we will then get muriatic acid, won't we, and nitric acid? A. Yes, sir.
Q. And this same nitrous acid, HNO2? A. Yes.
Q. And this same old nitrous acid will be around, ready to make nitrites, with anything that it will combine with, won't it? A. Yes.
Q. How is that? A. Yes.
Q. And, upon oxidizing the nitrous acid, or the NO2, you will get the nitric, and the nitric will be around, ready
1754 to make nitrates, out of everything it can get hold of, won't it?

A. So unstable are those compounds, that you can predict anything.

Redirect Examination

By Mr. Elliott:

Q. Mr. Butler, in interrogating you about met-hemoglobin, brought out that you had seen met-hemoglobin, as I understood it, in a child.

A. That was brought out in this testimony, whether I had seen met-hemoglobin, and I wanted to relate just the circumstances. That was a case of poisoning, and it was shown to be met-hemoglobin poisoning. That is the statement of the physician, was to the effect that it was poisoning, but this was due to the administration of over doses to a very small child of acetanild.

Q. Acetanilid? Do you know anything about the amounts?

A. Well, it was before they knew of the effects of acetanilid, and before they knew of its poisonous character, and I imagine, in this case, there must have been an impure acetanilid formed. There are other substances, besides nitrites, that will form met-hemoglobin, and it is so in this case, that that was the pronounced condition.

Q. I will ask you if it is within your knowledge that nitric acid and nitrous acid have been or are administered as medicines.

A. They have, yes, sir.

Q. And about the present? Do you know whether they are still administered as medicine—nitric acid and nitrous acid?

A. Nitrous acid was, in the time when I was dispensing, administered very commonly in the form of what was known as Chapman's Diarrhoea Mixture. The formula of it is published in Griffith's formulary, and the amount of the nitrous acid there stated is one fluid dram of the nitrous acid to eight fluid ounces of camphor water, and forty minims of tincture of opium, given in cases of diarrhoea and dysentery.

Q. Now about nitric acid?

A. Nitric acid is sometimes given, in a diluted form—diluted nitric acid.

1755 Q. Did you discover any xanthoprotein, in these flours that you have testified you examined?

A. No, sir.

Q. Now, you were asked something about diazo compounds, and Mr. Butler asked you if this Griess reagent would show the presence of diazo compounds. I will ask you if you made any test, in this digestion fluid, to see if diazo compounds were formed, and if so, with what results?

A. I don't think that was admitted. I don't think that point was admitted, that diazo compounds were formed, in my evidence.

Q. No, I did not say you said they were formed.

A. Well, assuming that they were formed? Is that the idea?

Q. I don't remember. I am just asking if you made any tests to see if diazo compounds were formed. A. Yes.

Q. And with what results? A. Negative results.

Q. What would you say as to the temperature, as controlling the formation of diazo compounds?

A. In order to form a diazo compound of the aromatic series—that is to say, of the phenol compounds,—compounds that we call the aromatic series,—as a rule, it is necessary to keep the temperature down to a definite decomposition. Some chemists state that they can form diazo compounds in crystalline form, from aqueous solutions, but it is generally admitted that they are unstable—unstable at the ordinary temperatures, and my own opinion is—now, I am not giving that as an experimental fact—but my own opinion is, that they are very unstable, and will be likely to be broken down.

Q. As a matter of fact, have you tested, and you say you got negative results?

A. Got negative results. That is to say, I had these experiments—we performed—Professor Emerson and myself—we both went over the same ground, to ascertain whether we could get the diazo reaction from this solution. We could get no diazo reaction from the use of the reagent.

Q. I will ask you if, in your judgment, sodium nitrite, or potassium nitrite, or any of these other nitrites mentioned by Mr. Butler, are added to flour by treating it with this Alsop process.

1756 A. No. No sodium nitrite, or any of those inorganic nitrites, in my opinion are added to flour, as we understand addition.

Q. Well, Mr. Butler was asking you as to the chemical formation of nitrites, and nitrates, and discussing the certainty, and so forth, with which they would be formed. I will ask you, as to these chemical combinations that he referred to is it true that concentration, and heat, and pressure, and the presence or absence of other substances generally—the law of mass action,—do they control these chemical combinations, as well as others? Do I make my meaning clear?

A. Well, I don't know about what controls chemical action.

Q. Well, it has been brought out here, I believe—at least this is my understanding—that, in dealing with a possible chemical reaction, that you must take into consideration the concentration. A. Yes.

Q. The law of mass action. A. Yes.

Q. Heat, pressure, and these things. A. Yes.

Q. Now, I will ask you if that applies to these reactions, just as well as others.

A. I suppose not, because reactions differ in their concentration, very much. Yes, I should have to, in order to grant those facts, I should have to make a further study of the whole subject.

Q. I believe you are answering my question in the affirmative. That is to say, in the absence of the knowledge of those conditions, could you say that any particular compound would be formed? A. No, sir.

Q. I will ask you, Professor Sayers, why you dealt with starch, in your digestion work.

A. That is, the starch constituents you mean?

Q. Yes. Why did you make your determinations on that?

A. I dealt with flour, you understand—not with starch.

Q. You dealt with the whole flour content?

A. Yes, I used the whole flour content.

By Mr. Scarritt:

Q. And made the digestion experiment on the starch.

1757 A. We understand each other, don't we?

By Mr. Elliott:

Q. You used the whole content of the flour? A. Yes.

Q. Now, when you go to determine the relative digestibility, you worked with—

A. (Interrupting) With the one factor—starch.

Q. Why did you do that?

A. The one factor that I used—the starch is, in the first place, it was very simple, direct, sensitive, and delicate, in my opinion. If I were to take the other—the ground of that had been gone over, or was gone over by Professor Willard—I would have been dealing with an element of analysis that would require more time and more care than I had to give to it.

Q. Now, this nitrogen determination is a quantitative one, is it not? A. The nitrogen?

Q. Yes, where you determined the amount of digestion.

A. Yes. It is quantitative.

Q. This method of making the nitrogen determination—

A. (Interrupting) Kjeldahl method.

Q. (Continuing)—is a quantitative one?

A. Yes, sir, it is a quantitative one, yes, sir.

Q. Now, I will ask you, would the method you employed, in your judgment, inform you accurately of the relative digestibility?

A. I considered that, so far as I am concerned, for my purposes, it convinced me more positively than any other kind of digestion.

Q. Now, I don't know if I asked you in your direct examination if you had—or whether you testified to dealing with the administration of sodium nitrite itself, placed in digestion fluid. Do you remember if you testified to that?

A. I don't remember.

Q. Well, if you ever made such experiment, please tell us what it is,—dealing with sodium nitrite.

A. I took flour that gave no reaction with the Griess.

By Mr. Butler:

Q. You mean the pure nitrite of sodium?

A. Yes, the pure nitrite of sodium. I took some unbleached flour that gave no Griess reagent test, and mixed with that an amount of sodium nitrite, that would correspond to,
1758 or would be considered as one part per million, and of the two parts per million and five parts per million, of sodium nitrite, and submitted that.

By Mr. Elliott:

Q. That was added to the flour, as I understand.

A. Added to the flour, yes, sir, and then I treated that flour by using the digestive processes—the pancreatic digestion, and the peptic digestion, in order to see whether that nitrite of sodium would receive the same reaction, or meet with the same fate, with the so-called nitrites, of the bleached flour, would meet. I found that this reducing action, or whatever it may be, was the same—that is to say, the Griess test, after prolonged digestion—an hour and a half or two hours, according to the percentage of sodium nitrite present—would disappear—give negative results.

Q. And did you ascertain, by taking some of the liquid out, and testing it with the Griess reagent? A. Yes.

Q. Now, tell me, in the case where you used five parts per million of sodium nitrite, how long was the pancreatic digestion working, before the nitrites had disappeared?

A. Before the nitrites disappeared, it was about—if I recollect rightly, three hours, five per cent. And then, as you lower—

Q. (Interrupting) With the peptic digestion, next.

A. The peptic digestion was, in some cases—it varied. It was two hours, in the peptic digestion. As I said—

Q. (interrupting) Two hours, before it disappeared?

A. Yes, sir.

Q. Now, take where you added one part per million sodium nitrite. I want to know the extremes. Where you used one part per million, sodium nitrite, how long before that disappeared in the pancreatic digestion?

A. About, sometimes as quickly as fifteen minutes.

Q. And then, with the peptic?

A. In the peptic digestion, it took longer than that, in the longer periods. That is to say, when I got the fifteen-minute reaction with the pancreatic, the peptic reaction was
1759 prolonged, but in a like case, where the pancreatic digestion was longer than the peptic digestion, then it was an hour and a half, about, in the case of the peptic digestion, and about two hours, or thereabout, in the pancreatic digestion.

Q. That is, one part per million?

A. Yes. In one part per million. They seemed to vary.

Q. Now, a statement was read to you from a patent—

Mr. Butler: (interrupting) That was Exhibit 1, being the Alsop process, Mr. Elliott.

Mr. Elliott: Exhibit 1?

Mr. Butler: Yes, written and signed by J. N. Alsop, whether his lawyer wrote it, or he wrote it, I will not say.

Mr. Elliott: You are not testifying at the present time. I will put you on the stand.

Mr. Butler: I will tell who wrote the specifications, if you do.

By Mr. Elliott:

Q. Do you know, or have you knowledge of Professor Charles E. Monroe, formerly president of the American Chemical Society? A. I know of him.

Q. Is he a gentleman of standing in that profession, to your knowledge?

Mr. Butler: We object to that. He is not here as a witness, and is not referred to or named in any document.

The Court: Let me hear this.

By Mr. Elliott:

Q. First, I will ask you if he is a gentleman of standing and repute. A. I don't know. I don't know his reputation.

Q. Well, if you don't know him, then, I presume there is no use. You do not know what his reputation is?

The Court: As a scientist?

A. No. I do not know him, as to his standing.

By Mr. Elliott:

Q. Suppose a chemist of standing in his profession—of pronounced standing in his profession, made the state-
1760 ment, or gave the analysis on which the statement was based, that was read to you by Mr. Butler, I will ask you if that knowledge would cause you to give credence, at

least, to the statement, until you had been enabled to disprove its falsity.

Mr. Butler: To disprove its falsity?

By Mr. Elliott:

Q. That is, would you accept it, until it had been disproved?

Mr. Butler: Wait a moment. Now, your Honor, it seems that the patent we have offered in evidence no longer enjoys the confidence of its author.

Mr. Elliott: I don't know why you make that statement.

Mr. Butler: Well, you have been proving it to be false, ever since the trial began. Now, if they want to try the question of whether or not the author was justified in putting that statement in, we will have to prove that by good evidence.

The Court: You mean Alsop, the author of the patent?

Mr. Butler: Yes, the author of the patent specifications. Now, if it is for the purpose of showing that he was misled, when he claimed in his patent that it added water, and increased the amount of proteids, and so forth, if that shall ever become material, let us go into that according to the rules of evidence. Now, I think it is not material to show that the author of the patent, Mr. Alsop, or his representative, was misled by it. They came in here and answered, without telling what they did to the flour. They said they treated it by the Alsop process, so the government had to show what Alsop's process was—began defining it, and step by step, when we called it NO2 gas—it could not have been forgotten already—that it was denied that nitrogen peroxide was used, until Mr. Mitchell was put upon the stand, and showed that he collected money, as the owner of the Alsop patent, on the claim that it had a monopoly on NO2, from the man in New Prague, who sent the baker, Wolf, the car load of bleached flour. Now,

1761 they want to explain how it happened that the patent is a misrepresentation, and they want to show that this man would have made a misrepresentation, too, if he got a chance, so, therefore, I say it is immaterial, and the objection should be sustained, but, if it is material, I want the man who brought the samples of flour to the chemist, one containing twelve per cent of proteids, and the other twenty-six, to see if they were "gold-bricking" the chemist, giving him Durum wheat, perhaps, and some Southern wheat, one strong in proteid, and the other weak in it, and claiming the benefit for Mr. Alsop's patent—this pure air that we were told about that went in—nothing but the purest, purest air.

Mr. Scarritt: I object to this speech.

Mr. Butler: I am arguing the objection.

Mr. Scarritt: He has not made an objection yet.

Mr. Butler: I objected to this question, and I object to you, and move to strike you out.

Mr. Elliott: Do you know what the question is?

Mr. Butler: The question is whether or not you, Professor Sayers, if a reputable chemist had told you so and so, you would have believed it, and published it, and so forth. I objected to it as irrelevant and immaterial. Now that is the substance of it.

Mr. Elliott: I will withdraw the question.

Mr. Butler: I thought you would. Now, will you tell the jury who wrote the patent?

Mr. Scarritt: I will put you on the stand.

Mr. Butler: I will waive the oath, if you will tell who wrote the patent.

By Mr. Elliott:

Q. Dr. Sayers, what is the usual time, if you know, of digestion, in the stomach? I believe you did not qualify on physiological lines.

A. No. I know the time when indigestion commences.

Q. You do not know the time of digestion?

1762 A. Digestion is supposed to take place in a very short time, and, in six hours, I presume digestion is complete.

Recross-Examination.

By Mr. Butler:

Q. Acetanilin—is that an acid? A. Acetanilid?

Q. Yes, that Mr. Elliott referred to. Is that an acid?

A. No.

Q. What is it used for?

A. It is used to reduce fever.

A. And to make imitation vanilla flavor, isn't it?

A. I never knew it being used for that.

Q. It is used as a headache cure, isn't it? A. Yes.

Q. Don't you know of a man down in Washington who was convicted—

Mr. Scarritt: (interrupting): I object to this, if your Honor please, arguing with the gentleman.

By Mr. Butler:

Q. Do you know that it is used as an adulterant of drugs and medicines?

Mr. Helm: How many questions are before the witness?

Mr. Butler: I withdrew the other question.

Mr. Scarritt: I object to this as irrelevant and immaterial.

By Mr. Butler:

Q. Do you know that it is used as an adulterant of drugs?

The Court: He may answer that.

Mr. Scarritt: Save an exception.

A. Now, I will have to think up a case where it is used. I know of the fact that it has been found as an adulterant for some substances, yes, sir.

Q. Would it be a good thing to add to flour? A. No.

Q. What is that? A. No.

By the Court:

1763 Q. Sir? A. No, sir.

By Mr. Butler:

Q. It would be a bad thing, wouldn't it? A. Yes, sir.

Q. It is used for a medicine, isn't it? A. Yes, sir.

Q. Would nitrite of sodium be a good thing to add to flour, or a bad thing to add to flour?

A. It would not be a good thing to add to flour.

Q. It would be a bad thing to add to flour, wouldn't it?

Mr. Scarritt: We object to that as irrelevant, incompetent and immaterial.

A. I presume it would.

The Court: Mr. Elliott brought that out in reexamination.

Mr. Scarritt: We except to the ruling.

By Mr. Butler:

Q. What is the test, or reagent by which the xanthoproteid re-action is proved, in chemistry?

A. On proteids, you mean?

Q. Yes.

A. Nitric acid, and ammonia, produce an orange color.

Q. That is the way to make it, I want to find out how you prove it, when it is made. Suppose we have here a sample of yellow, sulphur colored flour, and we want to find out whether the xanthro proteic reaction takes place. How do you find it out?

A. Find out whether the elements of the substance are there.

Q. I know, but what tests do you use?

A. The tests for the nitric acid.

Q. You mean the Griess test?

A. Well, I never applied the Griess test to that.
Q. What would you apply?
A. I assume, in a case of that kind—I have never been called upon to identify the xanthoproteic reaction, Mr. Butler.
Q. And you do not know that you could do that?
A. I could devise a plan to do it.
Q. But you haven't it readily in mind? A. No, sir.

1764 Q. Mr. Elliott asked you whether or not this bleaching system added anything to the flour, and you said nothing added, "as we understand the word addition", or something like that. A. Yes, sir.
Q. Now, what did you mean by that?
A. I mean by that, that, in the one case, we take, in addition of nitrite of sodium, we would take a grain of nitrite of sodium, for example, and add it to several pounds of flour. That would be an addition, you see, but, if I took the gas, and introduced the gas, I would not have the right to say—
Q. (interrupting) That there was an addition?
A. That I had added nitrite of sodium, or potassium, to that. That is the point.
Q. It would be the same substance, though, whether produced in the flour, or added to it? A. If the substance—

Mr. Elliott: (interrupting) If it is there.

By Mr. Butler:
Q. Yes, that is what I mean.
A. If the substance is there.
Q. And if, as a matter of fact, the Alsop process makes nitrite of potassium or sodium and calcium and magnesium in the flour, they are the same kind of substance as if you bought them in a drug store, and added them to the flour, are they not? Same kind?
A. I think if I were to admit that,—it is not correct for me to say that they are, to that, because it is not the same, because you do not add sodium nitrite—
Q. (interrupting) Are there two kinds of nitrites of sodium? A. No, sir.
Q. Are there two kinds of nitrites of potassium?
A. No, sir.
Q. Are there two kinds of nitrites of calcium?
A. No, sir.
Q. Are there two kinds of nitrites of magnesium?
A. No, sir.
Q. Or of the organic nitrites? A. No.
Q. So, nitrous acid is the same, whether made by the Alsop process, or made in a drug store by a chemist?
A. Nitrous acid is the same, no matter how you make it.
Q. So is nitric acid? A. Yes.

Q. So is NO2 gas? A. The same.

Q. And, if you can prove that nitrous acid is poison,
1765 when you find nitrous acid, why, then, nitrous acid is poison wherever you find it?

A. Yes, when it is in concentrated form, yes.

Q. Now, in chemistry, have you the rule of positive and negative evidence, that you apply, namely, this, that the positive testimony of one man that he did see a certain thing happen, is worth the negative testimony of a great many men,—worth more than the negative testimony of a great many men, who did not see it happen,—do you apply that rule in chemistry?

Mr. Scarritt: We object to that as calling for an improper conclusion of the witness.

By Mr. Butler:

Q. Well, negative results in chemistry, are not given as much weight as evidence, as positive results, are they?

Mr. Scarritt: Same objection.

The Court: You can answer that.

A. That is a psychological question, and it depends entirely upon what the negative results are based upon.

Q. Well, now, suppose we are trying to find out whether a substance is poisonous, and we give it to Tom, Dick and Harry, and they do not die, but we give it to Bill, and it kills him by poisonous action, would that be pretty satisfactory evidence that the substance was poison?

Mr. Scarritt: We object to that, mere argument, and calling for a wrongful conclusion of the witness.

The Court: He may answer.

Mr. Scarritt: We except.

A. Yes, that would show that that substance was poisonous in one case, and not a poisonous dose in the others.

By Mr. Butler:

Q. So that the positive result, then, would demonstrate the poisonous character of the substance? A. Yes.

Q. Even though other persons took it and did not die?

A. Yes.

Q. That is the rule of positive and negative results in chemistry, isn't it? A. Yes.

1766 Q. And, the proof that a man found something, chemically,—good proof that he found something, chemically, is worth the result of—

Mr. Scarritt: (interrupting): We object to that as mere argument.

Mr. Butler: Let me finish.

Q. (continuing) Is worth the testimony of a dozen men, who looked and did not find it, isn't it?

Mr. Scarritt: We object to that as mere argument and wrongful conclusion of the witness.

By Mr. Butler:

Q. Isn't that true?

A. I am not prepared to make that affirmative statement. I would like to give you an illustration.

Q. Now, I will ask you another question. You teach, don't you? A. Yes, sir.

Q. You teach beginners in chemistry? A. Yes, sir.

Q. Now, suppose you are analyzing a substance for a nitrite, and you find it. That conclusion is worth more than if every student in a large class examined for nitrite, and did not find it, isn't it?

Mr. Scarritt: Same objection.

The Court: He may answer.

Mr. Scarritt: We except.

A. Well, answering your question, there, as you put it, yes, certainly.

By Mr. Butler:

Q. Because you could not have found it, if it was not there, could you? A. No.

Q. But, they might have missed it, if it was there, mightn't they?

Mr. Scarritt: Same objection.

The Court: Overruled.

Mr. Scarritt: We except.

A. Yes.

Witness excused.

1767 Chauncey Abbott, called as a witness on behalf of the claimant, being first duly sworn, was examined by Mr. Elliott, and testified as follows:

Direct Examination

Q. Will you give your full name?

A. Chauncey Abbott.

Q. Where is your residence? A Skuyler, Nebraska.
Q. What is your occupation?
A. I am president and manager of a mill.
Q. What is the name of the mill?
A. Wells-Abbott-Neeman Company.
Q. What is the capacity of your mill?
A. Seventeen hundred barrels, daily.
Q. While I think of it, we had a witness on here yesterday, Mr. Shoecraft, and I will ask you if you were here when he was testifying? A. Yes, sir.
Q. He testified that he bought some flour from you, on March 12th I think it was,]1809]? A. Yes.
Q. Were you using the bleaching machine at that time?
A. Yes, we were.
Q. On the flour you sold him? A. Yes.
Q. Do you use the Alsop bleacher? A. Yes.
Q. How long has that bleacher been installed in your mill?
A. About five and one-half years.
Q. What grades of flour do you make, giving the percentages you put in each grade?
A. We make four grades. Our best patent runs from 82 to 85 per cent, and our second patent, 95. Then, we make a first and second clear. The second clear is sometimes called a low grade.
Q. Now, what grades do you bleach?
A. We bleach the two patents and, when requested to, we bleach the first clear, but never the second clear.
Q. How do you brand your patents?
A. The best patent is called "Puritan" and the second patent is called "Golden West". Do you want the names of the clear grades?
Q. Yes.
A. The first "Albemarle", and the second one "Brighton".
1768
Q. What would be your definition or explanation of the word "patent", as applied to flour?
A. I understand that a patent flour is anything better than a straight grade, ranging from, say, 55 per cent to 95 per cent, or might be even more than 95. Anything under a straight grade.
Q. Have you made investigations to find out what effect bleaching has on flour?
A. Yes. I frequently had baking tests made under my direction in a laboratory and kitchen we have at the mill, and the results have shown that the bleaching improves the quality of the flour, the same as age does. That is, take two flours that are alike in all respects except that one is bleached and the other is not, the loaf from the bleached flour shows

a greater volume, more loaves to the barrel and finer texture as well as lighter color.

Q. Have you ever noticed any foreign odor in bleached flour? A. No, I have not.

Q. Have you ever noticed any difference in the taste or smell of bread made from the same flour, bleached and unbleached?

A. No, excepting that I think, when bread is made from flour made from new wheat, that the flour is slightly improved by the bleaching.

Q. That is, the flour, right from new wheat?

A. Where the wheat has not been thoroughly seasoned—gone through the sweat.

Q. In that case, you say you think the flavor would be improved by the bleaching? A. Yes, sir.

Q. I will ask you if, in your judgment, you can bleach your long patent and give it the color of your shorter patent?

A. No. I could not give it just the same color.

Q. Why not?

A. Because these two flours, the first and second patents, have different color characteristics. They not only—it is not that they just differ in degree of color, but slightly different characteristics. The shorter patent has more of a creamy tint, while the longer patent has something that I might describe more as a grayish white, because of foreign substances that we are unable to take out from the long patent, with out present system of milling.

1769 Q. If a flour contains inferiorities, such as bran specs, and so forth, I will ask you if you can conceal those inferiorities by bleaching?

A. Neither of those foreign particles are affected by the bleaching. They would show out more, in contrast with the flour, if the flour was whitened, and for that reason, I prefer not to bleach our first clear.

Q. Before you installed the bleacher—several years before you installed the bleacher, I will ask you if you ever noticed flour collect in any part of your mill and stick there?

A. Yes. It used to collect on the inside of the roll frames, where the grinding is done?

Q. Where the grinding is done? A. Yes.

Q. And it would stay there, would it? A. Yes.

Q. Now, have you ever noticed the color of such flour?

A. Yes. It used to take on a yellowish color.

Q. How would that color compare, for instance, with this (referring to an exhibit), would it be a deeper yellow or a lighter yellow?

A. It would be fully as deep as that. Possibly a little darker.

Q. The exhibit I refer to is numbered 47. Now I will ask you how much pure turkey wheat you can obtain in the course of a year of grinding?

Mr. Butler: Objected to as irrelevant and immaterial.

The Court: He may answer.

Mr. Elliott:

Q. I mean by pure turkey wheat, wheat that is free from yellow berry. A. In bushels?

Q. I don't care how.

The Court: Proportionately, perhaps.

A. Not to exceed 1 per cent, pure turkey wheat, unmixed with lighter colors.

Mr. Elliott:

Q. Not to exceed 1 per cent?

A. Not to exceed 1 per cent.

Q. And I will ask you if all the other wheat that is obtainable by you, to your knowledge, contains yellow berry?

A. We get some that is tolerably dark in color and other that where a portion of the berry is darker and a portion yellow, then others, where the berry is almost, if not quite,
1770 yellow, and it comes to us more or less mixed in cars and wagons.

Q. Now, take the wheat—I will put it the "standard wheat", that, as a commercial proposition you are able to buy, for grinding, how will the percentage of yellow berry vary in that wheat—within what limits?

A. If the yellow could be separated, the yellow from the other, the dark, I should think 35 per cent yellow.

Mr. Helm: You think 35 per cent of the yellow?

A. Yes. The balance would be darker.

Cross-Examination

Questions by Mr. Butler:

Q. So, then, if a Nebraska miller came to you and told you his flour was made of wheat that only had 10 per cent in it, you would consider that a very improbable story, would you not? A. 10 per cent of yellow?

Mr. Scarritt: You mean the yellow berry?

Mr. Elliott:

Q. Yellow berry.

A. It would be much better than I am able to do, from the territory whence I draw my wheat.

Q. Where you draw your wheat? Is that west of Wellington? A. No. In Nebraska.

Q. Lexington, I mean. You go as far west as Lexington, where the flour that is seized was made? A. Yes.

Q. So that, if somebody out around Lexington was making wheat down there and claimed to be getting as low as 10 per cent, you would think it very doubtful, wouldn't you—10 per cent yellow berry?

A. Well, he might get it in moderate quantities, that way, but not in very considerable quantities, I should think. At least I have not been able to.

Q. Is it true as Mr. Holdredge told us here yesterday, that yellow berry does not make as much flour, or as good flour, or as white flour, as the pure turkey?

A. Well, it is my opinion that there is no material difference in the two, excepting as to color.

Q. Well, let me be a little more exact with you, than these general conclusions, Mr. Abbott. Do you like yellow
1771 berry as well as you do turkey, for milling?

A. I said we have never had enough turkey to grind alone, but, as between the dark, as we call it, and the yellow, I would prefer the dark, because of the difference in color, if we did not bleach.

Q. Have you answered? A. Yes, sir.

Q. I do not yet know which way you decided the question, is the yellow berry a benefit or an injury in wheat, as a miller?

A. I said that I would prefer the dark to the yellow, because the turkey wheat makes a lighter colored flour when we do not bleach.

Q. Is it not true, that the turkey wheat makes a stronger flour, as Mr. Holdredge, one of the witnesses on your side, said, yesterday? A. I have made no tests.

Q. You cannot swear that Mr. Holdredge was wrong about that, can you? A. No. I cannot, not from actual experience.

Q. Are you one of the millers in charge of the defense of this suit? A. Yes, I am contributing towards it.

Q. Very anxious that it should be won? A. Yes.

Q. By your side? A. Yes, if we could.

Q. Now, Mr. Holdredge also told us that no matter how much you bleached the flour made from yellow berry that he did not have as good flour then as he would if it was made from turkey wheat.

Mr. Scarritt: I object to his attempting to repeat the testimony of other witnesses.

The Court: I sustain the objection.

Mr. Butler:

Q. What is the fact with respect to that? Do you swear you could bleach the flour made from yellow berry so it would be as good as the flour made from other wheat?

A. In my opinion, yes.

Q. How much bleaching does it take?

A. Well, we expose the flour about fifteen seconds.

Q. I don't care what you do. I will ask you how much bleaching it takes on yellow berry to make it as good as if it was not yellow berry? A. About fifteen seconds exposure.

Q. How many horsepower to one hundred barrels per day?

1772 A. May I answer that by saying that we use about three horsepower to seventeen hundred barrels?

Q. You bleach very lightly? A. Yes, sir.

Q. You use less gas than seven horsepower to one hundred and fifty barrels a day? A. Yes.

Q. Do you believe, then, that this bleaching process can be so used as to injure the flour?

A. I could not say from my own observation or experience.

Q. I know. You never did that, but what would you think about that? Do you think millers can use it to cheat and defraud and deceive and injure the flour?

Mr. Scarritt: We object to that.

Mr. Butler:

Q. He is an expert on the Alsop business.

The Court: He may answer.

Mr. Scarritt: We further object because it is invading the province of the jury.

A. I do not think it could be used to deceive.

Q. You do not?

A. If it is bleached excessively, my understanding is that it will injure the appearance of the flour, and will give it a chalky, disagreeable appearance.

Q. Let me put this case to you, suppose the Aetna mill, down here in Kansas, made a flour in August from mixed wheat, new and old, and straight grade of flour, and added to it a 20 per cent clear that they bought from the Hunter mill near by, and bleached it, and bleached it hard and heavily, so it looked white, and labeled it "High Grade Patent"—now assuming that to be the fact, do you think that would be cheating and defrauding and concealing the inferiority by means of the Alsop process?

Mr. Scarritt: We object to that as irrelevant, incompetent and immaterial, calling for a wrongful conclusion of the witness.

The Court: He may answer.

Mr. Butler:

Q. On that assumption of facts now?

A. I think that deception could be practiced without the bleacher.

1773 Mr. Butler: I move to strike out his answer.

The Court: Yes, that is not an answer, Mr. Abbott.

Mr. Butler:

Q. I want to know whether you think that is cheating or not?

Mr. Scarritt: Same objection.

The Court: He may answer.

A. Yes, I think it is.

By Mr. Butler:

Q. Yes, you think it is. Now, you say bleaching improves the quality of flour? A. Yes.

Q. You say bleaching improves the quality of your first clear? A. Not in my opinion, no.

Q. Oh. A. I do not like the appearance of it.

Q. I am not asking you about the appearance. I am asking you about the quality now. You say that natural aging improves all flour, don't you? A. Yes.

Q. It improves it, and makes it a better flour? A. Yes.

Q. Better flavor, doesn't it? A. Yes.

Q. Better loaf?

A. Better flavor, when the flour is made from a very new wheat, not properly seasoned.

Q. I am not speaking of bleaching. I am speaking of natural aging.

Mr. Scarritt: He is speaking of aging.

By Mr. Butler:

Q. Were you? A. Yes.

Q. I thought you misunderstood me. A. I do.

Q. Now, let us get it straight. It is truth known as long as the milling art has been followed, that flour improves with age? A. Yes.

Q. In color? A. Yes.

Q. In quality? A. Yes.

Q. In characteristics of dough? A. Yes.

Q. In the flavor of the bread?

A. I think there is a slight improvement, and it would be noticeable as between an unseasoned wheat.

Q. And that is a very valuable thing, isn't it—a very valuable quality in good wheat flour, that it will improve
1774 and better? A. Yes.

Q. And the improvement is marked?

A. Considerably.

Q. Recognized in the trade by millers and bakers, and consumers, since the milling art commenced? A. Yes.

Q. Now, in answer to Mr. Elliott's question, you very frankly and candidly said, that bleaching is the equivalent of aging, as I caught it. Bleaching improves, the same as age does? A. That is what I said, yes.

Q. Now, is it hard or easy to measure the amount of bleaching that will equal a given period of aging? Is that hard or easy.

A. I have no means of measuring. Nobody does, either.

Q. Now, why is it, if bleaching improves flour as aging does, that you declined, except when compelled to do so by the request of your customers, to so improve your first clear in quality?

A. I had made no experiments as to clear as to improvements it may make in quality, but I prefer the appearance of it—the color, unbleached.

Q. But, if you bleach the first clear, you give it the same appearance the natural aging does, don't you? A. Yes.

Q. Natural aging improves the first clear, doesn't it?

A. Yes.

Q. What is that? A. Yes.

Q. Then, is it just because you cannot sell it as well, that you do not bleach it, and decline to, give us the benefit of the changes resulting from Alsop's process, applied to the first clear?

A. Our first clear is practically sold for export, and, by the time they get it, it has acquired age.

Q. Then you are willing to deny to the foreigner the benefit of the Alsop process, but as a rule you grant that benefit to the Americans, your fellow citizens, do you?

A. No, the foreigner, when he gets it unbleached, has the benefit of age, because of the length of time required before it reaches the baker.

Q. Well, now, don't you bleach it and put it out on the market and tell people it is bleached, and say this "Here it is. Here is my stuff, bleached. This is aged, and made as
1774 good in a few seconds as a year's time?

A. The trade we sell to, in this country, require a first or second patent.

Q. Do you not sell any clears in this country? A. No.

Q. And you call a 95 per cent a second patent? A. Yes.

Q. How long a clear is left?

A. There is a 5 per cent which we call a second clear, low grade.

Q. That is thrown in your horse feed?

A. No, sir. That is the second clear.

Q. What is it sold for?

A. Sold for flour, almost entirely goes abroad.

Q. Alone or mixed with something else? A. Alone.

Q. How branded? A. Branded "Brighton".

Q. Branded "patent"? A. No.

Q. Why don't you call that patent?

A. It is not a patent.

Q. It is not a patent? Does patent mean anything in this country? A. There is no established standard.

Q. No, I know that. I know there is no established standard.

A. Yes, as I said, a patent means anything better than a straight grade.

Q. So that, if I ordered from you a carload of straight flour, and you cut off 25 per cent of the middlings, purified it, and put it in a sack, and labeled it "A best patent" and gave me the balance and bleached it, would you be giving me a very high patent there? A. No, sir.

Q. You would be cheating me, would you not? A. Yes.

Q. Yes.

A. Because I had taken out a portion from the straight.

Q. You had cut the straight?

A. Cut the straight, yes, sir.

Q. You know what a "cut straight" is don't you? A Yes.

Q. How far is your mill from Updykes?

A. About fifty miles.

Q. Isn't a cut straight generally known in this country, among millers?

A. My understanding is that a cut straight is a straight grade, from which some middling flour is taken out. I never cut any.

Q. Do you understand that the straight grade includes the bran? A. Oh, no.

1776 The Court: You mean a cut?

Mr. Butler:

A. No, a straight grade. Then, if I ordered from you a straight grade, you would think I knew what I mean, and would give me all the flour that the wheat contained?

A. Yes.

Q. And you would not give me the bran? A. No.

Q. And you think that if you cut out 15 per cent patent you would be swindling me, wouldn't you? A. I do.

Q. Because I was entitled to all, and you took out the best of it, is that right? A. Yes.

Q. Now, if you bleached what is left—bleached the "Cut straight" you make it look like the straight, don't you, to the untrained eye?

A. If you have the two together, the difference would be noticeable.

Q. If you did not have the two together?

A. I think it would be very doubtful whether a person could detect the difference.

Q. So that the spurious would pass for the genuine?

A. One might be deceived.

Mr. Scarritt: I object to his calling it spurious.

Mr. Butler: It is spurious if it is a cut straight. He says it is a swindle.

The Court: Go on.

Mr. Butler:

Q. Now, if the cut straight was not bleached, it would not look so much like the honest straight, would it?

A. Well, I do not think a person seeing it by itself, could say positively whether it was or not.

Q. No. I mean they would not look so much alike, the bleaching of it down brings the color closer together, doesn't it? That is what it is for, isn't it?

A. It would be whiter. They would be nearer together.

Q. So that to that extent this bleaching helps the miller pawn off the spurious cut straight for the real straight, doesn't it?

Mr. Scarritt: I object to that as calling for a wrongful conclusion of the witness, and invading the province of the jury and not within the issues of this case.

The Court: He may answer.

1777 Mr. Scarritt: We save an exception.

A. It might possibly help deception.

Mr. Butler:

Q. Now, coming down to the particular case, here, hard turkey wheat, without yellow berry, makes a lighter colored flour than the same kind of wheat, containing 35 per cent yellow berry, doesn't it? A. Yes.

Q. If you bleach the flour made from the mixed white, you can make it look like the flour made from the pure wheat, can't you?

A. Looking at the bleached wheat, from the yellow berry, I do not think a person could tell which it was made from.

Q. But, by comparing them, they could, and the bleaching would bring them nearer together in appearance, wouldn't it?

A. Yes.

Q. And to that extent it would be one means of enabling the manufacturer of the flour from the mixed yellow berry to sell it as and for a first quality, pure, hard, turkey wheat flour, would it not?

Mr. Scarritt: Same objection.

The Court: He may answer.

A. I know of no difference between the two, excepting in color.

Mr. Butler: I move to strike out his answer.

The Court: That is not an answer.

Mr. Butler:

Q. You will have to answer that question.

A. Will you please read the question?

(Last question read by the reporter.)

A. Possibly would, if he was disposed to be fraudulent.

Q. Yes, if he wanted to be. Now, a short patent, like a 75 per cent patent, is better than a 95 per cent patent, isn't it, and worth a half a dollar or such a matter more?

A. Yes, it is a better flour.

Q. And sells for more? A. So considered.

Q. And sells for more? A. Yes, sir.

Q. And it is desirable, in the art of milling, to get just as much of this high grade patent as you can? A. Yes.

Q. Isn't that true? A. Yes.

Q. Now, it is lighter in color, isn't it—the short pat-
1778 ent? A. It is more of a creamy color.

Q. Yes, but it has a more beautiful color?

A. It has a better color, I said.

Q. A little lighter? A. Yes.

Q. Isn't that right? A. Yes.

Q. Bring them together, they are a little lighter?

A. A little different character.

Q. But, by a light blast, just like a summer zephyr, from an Alsop machine, you can bring them a little closer, can't you, in color?

A. No, there would be the same relative difference. There are different color characteristics as I understand it.

Q. Then, you cannot bleach your 90 per cent patent to look like your 80 per cent?

Q. And you think that if you cut out 15 per cent patent you would be swindling me, wouldn't you? A. I do.

Q. Because I was entitled to all, and you took out the best of it, is that right? A. Yes.

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A. No, there would be the same relative difference. There are different color characteristics as I understand it.

Q. Then, you cannot bleach your 90 per cent patent to look like your 80 per cent?

A. Not to make it look the same shade.

Q. Well, you cannot bleach it as white?

A. No, it won't come as white. We never tried excessive bleaching on either one. I did not go to that extent.

Q. Now, do you say that your 92 per cent patent cannot be bleached as white as your 80 per cent, made from this mixed yellow berry that is not bleached?

A. I do not believe it could.

Q. That is not bleached? A. That is not bleached.

Q. Yes, that is not bleached, I say.

The Court: 80 per cent is unbleached.

A. It could not be bleached to the same degree of whiteness.

Mr. Butler:

Q. I am not speaking of that, but you can make it whiter, can't you? A. I don't know.

Q. Now, I am not sure you understand me, and I am going to be sure, and then I will stop. You told Mr. Elliott you made two patents? A. Yes.

Q. You told Mr. Elliott you made all your patents out of mixed yellow berry wheat? A. Yes.

Q. You told Mr. Elliott that bleaching whitened your flour?

A. Yes.

Q. Now, one of your patents is 82 and the other is 95, are those the figures? A. 82 and 95.

1779 Q. Now then, you take your yellow berry, 80 per cent patent, and do not bleach it, and lay it aside in a sack, and then you take your 90 per cent patent and bleach it with your Alsop process, do you say you cannot make the color of the latter lighter than the color of the former? Do you say that, or do you say you do not know?

A. You can make it white. You can make it a chalky white.

Q. And you can make it just about the same color, can't you? A. No, not about the same color.

Q. Can you make them look alike? A. No.

Q. Can you tell bleached flour, by the looks of it, by the color, when you have no standard of comparison?

A. I could not be positive.

Q. Did you ever know a man who could tell a bleached flour by the looks of it, by the color, if he did not have a standard of comparison? A. I have heard that.

Q. But you do not believe that, without a standard?

Mr. Scarritt: That is objected to.

Mr. Butler:

Q. Can you tell it by any means? Can you tell bleached flour by any means, from another?

A. Yes, by placing them together.

Q. I have some samples here, and without knowing either is bleached or not, can you tell which is which, or whether either is bleached?

A. If I knew they were made in the same way.

Q. I know, but go out in the market and bring you in two samples of flour, and you would slick them down, and lay them side by side, can you tell me whether one is bleached or whether both are bleached, or whether either one is bleached?

A. I might be deceived on that.

Q. There is no known methods even for experts to tell, is there, either by looking, or tasting, or any other way?

A. I have heard men say they could, by their judgment.

Q. Can you? A. I would not say I could.

Q. Neither by chemistry or by any other way that you have ever heard of can you tell the difference, isn't that true?

1780 A. Merely a question of a man's judgment, I believe.

Q. Now, that being true, do you say that color, after bleaching, is of any value, as an index of quality?

A. Yes, I think as much as before.

Q. Was it ever any? A. Yes.

Q. Before this bleaching commenced, then, color was the one thing that practical men looked to, wasn't it? A. No.

Q. Well, it was the principal thing?

A. Not by any means.

Q. What was the other thing?

A. There was the texture of the flour, the strength of the dough, is of very great importance.

Q. I mean the consumer.

A. Oh, the consumer doesn't look or inquire about the color at all.

Q. Don't care, do they? A. No.

Q. Never did?

A. They wait until they bake it up. Never did care about that.

Q. And don't yet? A. It is the bread they are after.

Q. They don't care yet? Can you tell bleached flour bread from another bread? A. I don't know that I could.

Q. Don't you know that Mr. Larabee can, by modern milling, make flour out of the same wheat this Lexington man, Leflang, has whiter and better in color by honest milling methods than the Lexington man can by his method and the Alsop bleacher added together? A. No, I do not know.

Q. Don't you know as a miller that good machinery, good milling, great cleanliness and great care, will make whiter flour than the contrary? A. Yes.

Q. Don't you know that the bleacher will bleach flour wherever it finds it? A. Yes.

Q. Or however it is made? A. Yes.

Q. Don't you know that it is, and can be used on any flour, unless foreign matter is in the flour?

A. No, I think it will not improve poor flour.

Q. I think it will not improve any, but it will make poor flour white, won't it?

A. No, not if it is made from inferior wheat, it will not.

1781 Q. I mean, if there are no impurities, no bran, or foreign substances?

A. Then you would have a most excellent flour.

Q. Yes, sir. A. You would have a short patent.

Q. Now, it is true, isn't it, that some wheats make much better flour than others? A. Yes.

Q. When they are all clean? A. Yes.

Q. Now, isn't it true, that the whole scheme of bleaching is being used by incompetent millers as a prop for poor milling methods, whereas, if they would improve their mill, they can mill white flour? A. I do not think so.

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

The Court: He has answered, and the answer may stand.

Mr. Scarritt: We except.

Mr. Butler:

Q. But you do know that good milling methods will make good flour and white flour, without a bleacher?

A. It will not make white flour from all kinds of wheat.

Q. No, but a bleacher will make white flour from all kinds of wheat, won't it? A. Where he uses good wheat.

Q. Yes, but it will make them all look alike, won't it?

A. It whitens them more or less, I believe.

Q. Brings their appearance all together, so that an expert cannot tell which is which?

A. No, it does not bring them all together.

Q. Nearer together?

A. Well, on some wheats, it has a poor effect. Some flours, I should say.

Q. What wheat? A. Some flours.

Q. Well, I mean flours from what wheat?

A. From any wheat.

Q. Doesn't it improve the gluten and the dough of all flour?

A. I think it does. It does with the patents, I know. I have not experimented with the other.

Q. And it does with the clears?

A. Presumably it would with the clears, but I never tried it.

Q. It must come pretty near it, when it will improve a 95 per cent patent?

1782 A. It would seem so.

Q. It would seem that it ought to help a 30 per cent clear, then, wouldn't it? A. Yes.

(Recess was then taken for five minutes.)

By Mr. Butler:

Q. Before the bleaching came into effect, did you ever notice the smell of nitrogen peroxide gas about your bin, just before it packs? A. No, I never did.

Q. Did you, since? A. No.

Q. Do you smell anything?

A. I do not smell any odor of gas about the mill.

Q. I mean, in this bin.

A. In the flour bin?

Q. Yes.

A. I have tried to smell it on the flour, as it comes out of the bin into the packer, but there is no evidence of odor, there.

Q. Did you ever notice that there was an odor to this Alsop process, at all, any way?

A. Not unless I open a valve on a pipe where the gas is.

Q. Have you done that? A. Yes.

Q. And you do smell it?

A. Oh, it has an odor, yes.

Q. Did you ever notice, since you commenced it, the yellow flour adhering to the walls of the bin, as was described by Mr. Edgecomb, in his mill?

A. No, I have never looked inside of the flour bin.

Q. Never took any pains to clean off that yellow flour, if any gathers there in your mill?

A. I do not think any gathers there. I have never found any.

Q. Well, you never looked for it?

A. It would have come down in the flour, out of the bin, if there had been any.

Q. Oh, yes. So, you never looked at the walls of the bin, but you think there wasn't any, or you would see it in the sacks? A. Yes.

1783 Q. You are very sure that, if any does gather on the walls, it comes down into the sacks? A. Oh, yes.

Q. So, the idea that it adhers to the wall, until you sweep it off, does not agree with your views?

A. I will have to amend that. I do not know, really, because I never have looked any.

Q. You would not like to put it in the other fellow's sacks, would you?

A. I really don't know whether it sticks, or comes down. I have never known of any to come down.

Q. Do you use some oil on your rollers?
A. Yes, on the bearings.
Q. When the same kind of oil, in fine dilution, or disintegration, comes onto flour, have you noticed what color it changes the flour?
A. No, I have not.
Q. Now, if this machine oil that you use to oil your rolls, up somewhere in the vicinity of where you used to see this yellow flour, before you commenced to bleach, was put on flour, what color do you think it would be?
A. If the oil was put on?
Q. Yes.
A. Well, the oil is much darker than a yellow color.
Q. What color do you think just a little oil from around the bearings would have on flour?
A. I would not like to say, without having some knowledge of it.
Q. Do you think it would be yellow?
A. I could not say. I think the oil would color it a deep yellow, or yellowish green.
Q. What color is the oil?
A. It is—oh, sort of a—I should say a combination between a yellow and a green and a black.
Q. There is yellow color in it?
A. Yes, there is some yellow color in it, I should say.
Q. An oily, yellow color?
A. Yes. Not distinctly, but such a color—such a shade as you would think those three colors, mixed together, would make.
Q. You think that might possibly, in very thin dilution, discolor the flour some, and make it look a little yellow?
A. If it came in contact with the flour, it would discolor it.
Q. How often do you clean out that yellow flour that comes up in the mill? A. In these roller frames?
1784 Q. Yes.
A. I do not know how often it is cleaned. There is very little accumulation there now, because of different arrangement for taking it off with air.
Q. How often do you clean out the agitator?
A. I could not say.
Q. Is it ever cleaned out?
A. In fact, I do not know that. All parts of the mill that need cleaning, are cleaned.
Q. So, you understand, or do you know?
A. Yes, those are my orders.
Q. Yes, I know, but I give a lot of orders that they do not follow, in my shop.
A. I believe they are in this case, because I have a superintendent to follow it up.

Q. You hire a man to watch them? A. Yes.

Q. Suppose the agitator is about the shape of this jar (referring to an exhibit). Do you know how close the fans come to it? A. No, I do not know how close.

Q. Never saw that agitator, inside?

A. Yes. I saw it when it first came, but I do not know what distance it was.

Q. Suppose yellow flour, that will be turned yellow by five hundred minutes of exposure to this gas in there, adhers to that, what means have you taken, even by orders, to keep that yellow flour out of the food?

A. I have given no definite orders respecting that, and I do not know whether it would remain there, or whether it would drop down. It is something like the flour bin.

Q. How is that?

A. I will have to give the same answer as I did about the flour bin. I do not know whether it would remain there, or whether it drops down, or whether it forms there.

Q. What definite orders have you given to keep the yellow flour that gathers, if any, in your spouts?

A. I have given no orders, especially, respecting yellow flour, but to keep all parts clean, that need cleaning.

Q. And what means your millers take to do that, you do not know, except you assume your orders are carried out?

A. Yes, that is all.

Q. That is, while you have no personal knowledge of it, you asume that, if the yellow, xanthoprotein poisons
1785 flour, does accumulate in your agitator, that your millers take approprite steps to keep it out of the flour?

Mr. Helm: We object to that. He does not assume anything of the kind, as I understand your question. You assume that he does.

The Court: He may answer.

Mr. Butler: I think Mr. Helm misunderstood the question, Mr. Witness, but I have no doubt you understand it.

A. Yes. I assume and believe that all parts that need cleaning are cleaned, sufficiently often.

Q. Including this yellow stuff, if any, which gathers on the inside of your agitator, where the bleaching is done?

A. If any.

Q. Yes, if any. A. Yes.

Q. And from the walls of the bin, if any?

A. If any, yes, sir.

Redirect Examination

By Mr. Elliott:

Q. Do you get the same price for your clear, bleached or unbleached? A. Yes, we get the same price.

Q. How do you sell your clear?

Mr. Butler: That is objected to as irrelevant, immaterial and not redirect.

The Court: He may answer.

A. Clear is sold usually by sample.

By Mr. Elliott:

Q. You sell your patents under a guarantee to give satisfaction? A. Yes.

Mr. Butler: Wait a moment. We object to that, as irrelevant and immaterial.

The Court: Yes, that is sustained.

By Mr. Elliott:

Q. Aside from bleaching, I will ask you, in your judgment, if a consumer could tell a cut straight from a full straight.

1786

Mr. Butler: Objected to as irrelevant and immaterial.

The Court: He may answer.

A. No.

By Mr. Elliott:

Q. Do you make either a full straight, a straight flour, or a cut straight flour? A. No.

Q. You do not make either one? A. Neither one.

Q. Now, I will ask you if such a wheat as you have testified to grinding, containing say thirty-five per cent of yellow berry, is, in fact, a first quality, hard wheat.

Mr. Butler: Objected to as not redirect.

The Court: He may answer.

A. Yes.

By Mr. Elliott:

Q. And is it so rated in the markets, in Nebraska and in Kansas City both? A. It is.

Q. Mr. Butler asked you if you had a flour free from impurities, if you could not bleach it, and improve it. I will ask you if you have a flour that is free from impurities, if you have got a high grade of flour. A. Yes.

Q. I will ask you if there is the same relative difference in the grades of flour which you make and bleach, after bleaching as there is before bleaching.

A. Yes. The difference is the same—same relative difference.

Recross-Examination

By Mr. Butler:

Q. Mention two flours, neither one of which is wholly disreputable, that an ordinary consumer could distinguish bebetween.

Mr. Scarritt: Bleached or unbleached?

Mr. Butler: I do not care.

A. Well, I should think an ordinary consumer could distinguish between a first patent and a clear.

1787 Q. If bleached? A. Yes.

Q. How? A. By the difference in the look of it.

Q. Difference in the look? A. Yes.

Q. One looks like a creamy, natural color, and the other looks like a dead color?

A. The one has impurities and specks in it.

Q. Can you tell? A. Yes.

Q. Unless either has impurities and specks?

A. I never saw a clear grade without.

Q. You never saw a clean clear flour? A clean, clear grade of flour? A. Not that is called clear grade.

Q. You never saw that, in your line?

A. What is called clear grade is not as clear in appearance as the patents, you understand.

Q. Is that the reason it is called clear, because it has dirt in it?

A. I haven't the slightest idea. I have always considered it a misnomer.

Q. Then, we are to understand that the word "clear flour" has a definite meaning in the markets? A. Yes.

Q. That is, a flour having dirt in it?

A. That is not the chief characteristic. I should not describe it in that way.

Q. But, that is the way the consumer can tell it?

A. It has more of the bran and [crease] dirt in the wheat.

Q. So, the way a consumer can tell a clear flour, is, because it has dirt in it?

A. Yes. Foreign matter, I should think.

Q. Now, mention two flours, neither one of which has dirt in it, that the consumer can distinguish between.

A. I do not think a consumer could distinguish from the appearance of the flour, between a long patent and a short patent.

Witness Excused.

F. D. Larabee, called as a witness on behalf of the claimant, being first duly sworn, was examined by Mr. Elli-
1788 ott, and testified as follows:

Direct Examination.

Q. Where do you live? A. Hutchinson, Kansas.
Q. What is your occupation?
A. Well, I am the president of the Larabee Flour Mills Company. Have the management of the business.
Q. How many mills have you, Mr. Larabee?
A. Two. One at Hutchinson, and one at Stafford.
Q. What is the capacity of the mill at Hutchinson?
A. Eleven hundred barrels.
Q. And at Stafford? A. Five hundred.
Q. So, you have a daily capacity of sixteen hundred barrels of flour per day? A. Yes, sir, that is right.
Q. What grades of flour do you make?
A. We make three grades of flour. One, which would approximate ninety-two per cent, and one, one hundred per cent, and then the eight per cent which is left when we are making the ninety-two per cent grade, but, in making all of these grades, I base the percentages on approximately three per cent low grade, always being taken out.

By Mr. Butler:
Q. So that would be ninety-two per cent of ninety-seven?
A. Yes, two per cent left, and this low grade we run to our feeds, and do not figure as flours. That is the reason I gave the percentages that way.

By Mr. Elliott:
Q. What grades do you bleach?
A. We bleach the ninety-two per cent, and the one hundred per cent.
Q. What is your first grade? What do you name it?
A. "Empress".
Q. Your first one? A. "German Mill" flour.
Q. How is that branded?
A. That is branded "German Mill Flour".
Q. What is the other flour branded?
A. "Empress Flour."
1789 Q. Your Empress flour is what per cent?
A. One hundred per cent.
Q. And your ninety-two per cent flour is called what?
A. "German Mill."
Q. Do you use the word "Patent" on your sacks? A. No.
Q. In what sections of the country do you sell your flour?

A. Well, we sell our flour from coast to coast, but the largest proportion of it is in the Southwest, and the Southeast—the Pacific Coast.

Q. Do you sell any in the state of Missouri? A. We do.

Q. To what extent? How much?

A. I should roughly say fifteen per cent.

Q. Is there any difference in color between your one hundred per cent flour and your ninety-two per cent flour?

A. There is. The ninety-two per cent is a little whiter than the one hundred per cent.

Q. Now, suppose you bleach those two flours. I will ask you if there is the same relative difference between them, after you have bleached them as there was before you bleached them? A. Yes, there is.

Q. Do you use an Alsop bleacher? A. We do.

Q. What kind of wheat do you grind?

A. We grind principally Number 2 hard winter wheat.

Q. How much does that weigh?

A. Fifty nine pounds or better to the bushel.

By Mr. Scarritt:

Q. Kansas wheat you mean? A. Kansas wheat.

By Mr. Elliott:

Q. Do you get any Number 1 wheat for grinding?

A. No. No Number 1.

Q. Have you ever detected any foreign odor in flour that has been bleached by the Alsop process? A. No, I have not.

Q. Have you ever noticed any color in the gas com-
1790 ing from the Alsop machine? A. No.

Q. Have you ever had any dough balls in your mill?

A. Yes, I think they do, in milling. I think there is occasionally dough balls get into the rolls.

Q. Into where? A. Into the rolls.

Q. What becomes of them?

A. They are either ground out, or thrown off, and bolted out.

Q. Bolted out? A. Bolted out.

Q. Have you ever noticed any pressure in any of the pipes connected with the Alsop machine? I will ask you is there any pressure in those pipes?

A. Oh, no. Just the pressure that would come from a slight draught, going through the pipe, if you could call that pressure.

Q. In the conditions of bleaching, as they exist with you, with the pump connected with the Alsop machine, the pipe leading into the agitator, and a hole in the agitator through which the flour goes down to the packer, and what remains, in your judgment, could there be any pressure in there?

A. No, I do not think there could. Not in the pipes.

Q. What percentage did you make your "Empress" flour, before you began to bleach?

Mr. Butler: I think we will object to that as irrelevant. It is not connected with this case at all.

The Court: He may answer.

A. One hundred per cent. The same as we did afterwards.

By Mr. Elliott:

Q. You make no difference in the percentage, when you use the bleacher? A. No, sir.

Q. How long have you been in the mill business?

A. Between eleven and twelve years.

Q. How is it that you are enabled to make what you term one hundred per cent flour?

A. We can make that flour on account of a perfectly equipped mill, or as perfectly equipped as we know how to do it.

1791 Q. Just tell us, in a word, how that equipment is different from an ordinary mill.

A. It is a long system of milling.

Q. What you term a long system? A. Yes.

Q. Now, tell us what the difference is between a long system of milling and a short system of milling.

A. In the first place, we have more breaks for the wheat.

Q. That is where the wheat is crushed?

A. Where the wheat is crushed, where we try to separate off the bran, and the shorts from the flour making parts.

Q. Now, how many breaks as a matter of fact, have you?

A. Eight.

Q. Now, how would that number compare with the ordinary mill. A. I should say ordinarily it is double.

Q. Double the number of breaks?

A. I should say ordinarily.

Q. Now, go on and explain this long system of milling.

A. After the breaks, we grade all of our stocks carefully, before coming to the next reductions, and we separate every reduction into a fine, and a course separation, and grinding the fine brand, and purify the fine and coarse stock separately. We feel by doing this that we get an accurate grind to each kind of stock, and it enables us to adjust the rolls to the particular stock. This handling allows us to keep the impurities out through the whole process of milling.

Q. Now, does that process differ, where you are making one hundred per cent patent, from a system in which, for instance, a miller was making seventy-five per cent grade, which he called his patent flour, and twenty-five per cent clear—the rest low

grade. Now, does that system differ from one in which the miller would simply add that clear to that patent, to make a straight?

A. I should say that it would differ from it, and that we retain the good qualities of the wheat berry; by handling the stocks very gently.

Q. If I understand you, does that mean that some of the first quality wheat—some of the best of the flour in the wheat, if I may so put it, will appear down at the lower end of the mill, just as that may appear at the head of the mill, something of that kind?

1792 A. Something that way. It is by careful handling of our stocks that we preserve their integrity throughout the mill. If you are obliged to grind them fast, or put them though the process quickly, you cannot take the care that is necessary to produce the highest quality.

Q. Now, I will ask you, as a matter of fact, if a flour milled as you are milling it, being one hundred per cent, compares in quality with some other mill's seventy-five per cent patent, for instance.

A. We guarantee it to be just as good, so far as giving satisfaction to the trade is concerned.

Q. Now, assuming the ability of the miller, such as in your mill, to get from the wheat all the possible flour content, that a perfected milling system will render possible, I want to ask your opinion as to the value of that flour content? Is it equally valuable, if you can free it from impurities?

A. I think it is.

Q. Have you any knowledge as to whether different mills throughout your section of the country, at least, make the same patent flour—same percentages and qualities, and things of that kind? A. That we do?

Q. Oh, no. Is there any uniformity?

A. No, I do not think so. I think each mill has a standard of its own.

Q. How much red turkey wheat would you say is obtainable during the course of a year, for grinding?

A. That is so small a quantity that it would be hard to estimate it, but I doubt if we would get one per cent.

Q. I did ask you the kind of wheat you grind, did I not?

A. Yes.

Q. Now, I will ask you how long you have been using the pipes and hose, if you have any, in your mills.

A. About two years.

Q. Is that the same in both mills?

A. It is a little bit longer in one. Perhaps six months longer in the Stafford mill, than in the Hutchinson mill.

Q. I have a notation here, three and one half years in one and two in the other.

A. A number of pipes in the Stafford mill have been in longer than that. The mill burned, and part of the pipes
1793 were not changed.

Q. I will ask you how long were they in there before the mill burned.

A. My recollection would be around three years.

Q. Now, just let us assume that you could get this one per cent of turkey wheat. I will ask you, as a practical miller, if it would be feasible, for you to use it.

A. No, I do not think it would be feasible. You mean to use it by itself alone?

Q. Yes.

A. I do not think it would be feasible, because it would not be a flour that we could make a standard.

Q. Just explain why.

A. It would make a different color of flour than the flour that we ordinarily are able to get from such wheat as we can obtain.

Q. That is, if I understand you, you grind that all up together, and you could not get any more wheat to duplicate the flour? A. No.

Mr. Butler: Did he finish his answer?

Mr. Elliott: I believe he did.

By Mr. Butler:

Q. Did you finish, before you were interrupted?

A. I think I did. I am not sure.

By Mr. Butler:

Q. You were telling us that it was making a different kind of flour.

A. Well, it would make a different kind of flour. I think it would make a flour that would be a little lighter in color, would be my opinion.

By Mr. Elliott:

Q. What would you say as to the possibility of any of the yellow flour you have heard so much about, getting into your flour?

A. Oh, I do not think it would be possible. In fact, I have never known it to happen, as long as I have been milling.

Q. I will ask you if you, before adopting the bleaching process, or afterwards, made any experiments in bleaching flour, and if so with what and with what results?

A. Yes, we did, when we first learned of bleaching. I
1794 experimented some with electricity, and the experiment I made was by enclosing two—

Mr. Butler: (interrupting) I think we will object to this as irrelevant and immaterial. It is not related to this process, I suppose.

The Court: I do not know what kind of gas it produced. We will hear him.

Mr. Butler: Did it produce NO2?

Mr. Scarritt: No.

A. (continuing) I enclosed two arc lamps, with a Russiometal hood, leaving openings at the top and bottom, and the lower opening I connected to a small Buffalo fan, thus drawing the air through the top, and down, and discharging it at the bottom.

Mr. Butler: Just a moment. I hope we do not find it necessary to investigate other methods of bleaching. This is an experimental matter.

The Court: I do not know what its purpose is, or what gas is produced. We will see what will come of it.

Mr. Butler: Unless it is related to this, I hope Mr. Elliott will not oblige me to go into it, because we have so many systems, now.

The Court: Go ahead.

A. (continuing) And, with this air, or gas, I could bleach flour.

By Mr. Scarritt:
Q. How is that?
A. With this air or gas, I could bleach flour.

By Mr. Scarritt:
Q. That is coming through that? A. Yes.

By Mr. Elliott:
Q. Was that the ordinary arc? A. Ordinary arc lamp.

Mr. Elliott: I just thought it might make it a little clearer.

Mr. Butler: I move to strike out the testimony as irrel-
1795 evant and immaterial, and not having any connection with the case at all.

The Court: I will see what becomes of it. It may stand for the time being.

By Mr. Elliott:
Q. I will ask you if you use bleached in your own family.

A. I do.

Q. I want to also ask you this question: do you regard a yellow color in flour as a defect?

A. Yes, I do. It is an advantage to remove it.

Cross-Examination

By Mr. Butler:

Q. Mr. Larabee, it is my information that you are one of the gentlemen in charge of the defense of this law suit.

A. Yes, sir, I am one of the committee from Kansas.

Q. Now, I do not ask you that, to twit you, or anything of that sort, but simply that we may have an understanding at the outset. A. Yes, sir.

Q. You want to win the law suit? A. I certainly do.

Q. And you are very much in earnest about that?

A. I would not be here if I was not.

Q. You have no interest in the mill at all?

A. I beg pardon?

Q. You have no interest at all in the mill that made this flour that is seized? A. No, sir.

Q. You do not know anything about how it was made?

A. No.

Q. Or whether the Alsop process was properly used, or abused? A. Never even saw the flour.

A. And you do not want to be understood now, by what you have heretofore said, as being so partisan that you cannot answer me fairly, and with that high degree—

A. (interrupting) I will try to answer fairly, Mr. Butler.

Q. (continuing) And that high degree of intelligence that comes from your experience. Now, Mr. Larabee, you
1796 are also a stockholder in the Alsop Process Company?
A. No, sir.

Q. Are you financially interested in it in any way?

A. No, sir.

Q. Did you patent your process?

A. Yes. We patented our process.

Q. Did the Alsop Company sue you for an infringement, and make you quit, and take you over?

A. We sold to them.

Q. They wiped you out on the ground that the electric arc put NO2 in the air, too, didn't they?

A. Yes, we went out of business.

Q. That was because their patent gives them a monopoly on the use of NO2 for bleaching flour?

A. I do not know about that.

Mr. Elliott: I object to this, Your honor. This witness does not know anything about that. It is not true.

Mr. Butler: It is not true?

Mr. Elliott: Will you please understand me, Mr. Butler. The Andrews patent is the patent that you are thinking of.

By Mr. Butler:

Q. Now, did the Andrews patent, owned by the Alsop Company claim, in this controversy about the infringement, that your NO2 was an infringement upon their right, because the Alsop Company, as the owner of the Andrews patent, and of the Alsop patent, had a monopoly on NO2?

Mr. Helm: We object to the question as incompetent and immaterial, and the only purpose, that I understand, in asking these questions is to show the interest of this witness in the Alsop Process Company. He has answered that they sold this patent to the Alsop Company, and have no interest in it whatever. Now, isn't that the end of it?

The Court: I do not know what their contract was or anything about it.

Mr. Scarritt: That is what he said it was.

Mr. Helm: That is what I understood the witness to say is the situation.

1797 The Court: Of course, you and I and everybody have read the litigation between the Andrews, the English patent, and between Alsop, the American, in their round-up with Frichet, the Frenchman.

Mr. Helm: My understanding is, Mr. Larabee sold whatever interest he may have had in this Alsop Company.

The Court: Yes.

Mr. Helm: They bought him out.

The Court: Yes.

Mr. Helm: He now has no interest in their company.

The Court: And Andrews, the Englishman, sold to the Alsop people.

Mr. Helm: I suppose he has no interest in this law suit.

Mr. Scarritt: This is a question of the interest of this witness.

The Court: That is the condition of history, isn't it?

Mr. Helm: I understood Mr. Butler's questions to be to test the interest of this witness, in this litigation.

Mr. Butler: No. They dragged in another bleaching process, and we had a good deal of testimony about the bleach-

ing of flour, and the kind of bleaching, without identifying the process, and I am going to show that they are all babies of the same family, every mother's son of them, and it is NO2.

The Court: Go on.

By Mr. Butler:

Q. Now, Mr. Larabee, the Alsop Company put your process out of business, either by suit, or some claim of infringement upon the claim that you employed the same medium for bleaching, that they did, namely, NO2?

A. No, Mr. Butler: I never heard of NO2. I am not a chemist.

By the Court:

Q. Well, nitrogen peroxide.

A. Well, that I don't know, Judge.

By Mr. Butler:

1798 Q. The same gas.

A. They claimed that we were infringing on their process, and we finally decided that it was the better thing to do to sell out to them, but this was before they acquired the Andrews patents.

Q. You are familiar with the Alsop patent? Did you ever see that. A. No, I have never seen that.

Q. That patent says they use NO2 to bleach. Do you know whether that is so or not?

A. No, I do not.

Q. You know they use some kind of gas?

A. I know we get a gas, there, that bleaches the flour.

Q. Is your company, or your family, or relatives, interested, in any way, in the Alsop Company? A. No.

Q. Have you no financial interest in that company?

A. I think not.

Q. Are you pretty clear on that?

A. I am pretty clear on that.

Q. You are not the only Larabee connected with this milling company? A. I have a brother.

Q. Now, are you clear that neither your company, nor any one of your company, or firms, has any financial interest in this company? A. Yes.

Q. How long have you made this brand called "Empress"?

A. Mr. Butler, I have made that ever since I have been connected with the mill?

Q. How many years?

A. That has been eleven or twelve years, and the brand was started when the mill, which we acquired by purchase, was started. We inherited the brand.

Q. Where did that brand find its market? Where does it?

A. Where does it?
Q. Yes.
A. We sell that brand all over the country, and export it.
Q. You think it is a good flour, don't you?
A. I know it is a good flour.
Q. You think you have a good mill, Mr. Larabee, don't you?
A. Yes, I think that, too.
1799 Q. You think good milling makes good flour, don't you?
A. Bound to. Good milling makes good flour.
Q. And, other things being equal, it makes whiter flour?
A. Yes, sir.
Q. Your one hundred per cent, which is, in fact, ninety-seven per cent of the whole—
A. (interrupting) Well, if you call the low grade flour. We do not call that flour. We call that feed.
Q. I am glad you put it that way. Your one hundred per cent, as you call it, you believe to be better than a great many seventy-five per cent patents, made out of the same kind of wheat?
A. Well, I have gotten an inclination to feel that way.
Q. You know it, don't you?
A. I know I have got a good flour that will compete with any of them.
Q. You think your one hundred per cent patent, by reason of your milling methods, is better than most of the seventy-five per cent patents on the market, of the same wheat?
A. Well, I would not say that I know that, but I know I put my flour in competition with any man's flour.
Q. And you win in the competition?
A. I stay with them.
Q. And your price gets so high that Mr. Hohengarten had to buy other flour?
A. Now, since you have brought that up, Mr. Butler, may I explain it?
Q. No.

Mr. Scarritt: Sure.

A. The bakers, as a general rule, buy flour where you have stronger competition. In other words, more millers are working for the bakers' trade. The family trade is harder to get, and we cater to the family trade. At the time Mr. Hohengarten stopped buying flour from us, was simply due to the fact we could sell to other markets for better money.
Q. The price was too high for him.
A. The price was too high for him.

Q. So, you could not only compete with the other flours, with the shorter percentage of patent, but you can
1800 select your trade?

A. No, I cannot do that, but I can compete with them in price, too and I can get my flour in to the trade.

Q. There was very good milling done before NO2 was used to bleach flour, wasn't there?

A. Oh, I think we did good milling years ago.

Q. Good milling? A. Yes.

Q. The Empress was a good flour then?

A. The Empress was a good flour then, but we have improved it since, and we improve it continuously.

Q. And you have improved your mill, since?

A. Certainly, yes.

Q. You are spending lots of money, buying the best machinery abroad and at home that money will buy?

A. Yes, sir.

Q. And you have a concrete mill?

A. A concrete mill.

Q. That the weevil won't come into? A. Well—

Q. (interrupting) They don't do it?

A. They do not.

Q. They stay out, and you keep it clean, don't you?

A. Certainly.

Q. And you keep your flour clean, don't you?

A. Yes, sir.

Q. And you do not abuse the bleaching process, do you?

A. No, I do not think we do.

Q. How many horse-power do you use to make one hundred barrels?

A. Mr. Butler, I am not posted on figuring electrical current in horse-power.

Q. By kilowatts, then.

A. I can tell you in amperes. To bleach eleven hundred barrels, we use approximately, as I remember it, three amperes.

Q. Three amperes? Your voltage is five hundred?

A. Five hundred volts, yes.

Q. You know they use three amperes and five hundred volts to bleach one hundred barrels a day, did you?

A. We never had a hundred barrel mill, since the bleaching process came into operation.

Q. At that rate, I mean. A. No.

Q. You have given me your maximum rate?

A. Well, I think that, Mr. Butler, now, that is just my recollection of it. I haven't looked it up.

1801 Q. Yes. I am not binding you to that.

A. I think that is what we use.

Q. I know that a man of your affairs cannot have all these details in mind, and I did not intend ever to impliedly criti-

cise you for it, but your understanding is you have five hundred voltage and three amperes, to bleach eleven hundred barrels a day?

A. I think that is approximately correct, yes, sir.

Q. And you never did use the bleaching medium any thicker than that? A. We use substantially the same.

Q. That is to say, all the time?

A. Yes, practically all the time.

Q. In all seasons of the year, and from one year to another? A. Yes.

Q. And that is light bleaching, isn't it?

A. Well, I don't know. I am not sure.

Q. That is your bleaching, isn't it?

A. That is our bleaching.

Q. Is color an impurity?

A. No, I do not think so. We get a very clear, well dressed flour, apparently free from impurities, which is yellow in color.

Q. The coloring substance is found normally in the wheat kernel, itself, isn't it? A. I should think so.

Q. Well, you know that, don't you? You know that, right in the heart of the wheat kernel, there is some, and all through there is some. I do not mean in the same degree.

A. Oh, no, I understand.

Q. But in varying degrees, as you go up to the bran.

A. I imagine it was something like that.

Q. Now, a short patent is usually the middlings?

A. Yes. They usually take what they call middlings stock.

Q. And that comes from relatively near the center? Just to illustrate my point, what I am getting at is this: if there is a short patent, under ordinary milling methods, such as commonly used, we will say, for the purpose of illustration, only fifty per cent patent, roughly speaking, that would be from the middlings, near the center of the kernel?

A. I think the middlings nearer the bran would be
1802 harder to keep the impurities out of.

Q. Now, as you lengthen your patent, the color usually increases? I am not speaking of your mill, particularly?

A. I understand.

Q. But generally, in the milling operation.

A. Yes, it gets a little darker in color, the longer the patent.

Q. So, your short patent—you have one short?

A. Yes, about eighty per cent.

Q. And that is a little lighter in color? A. Yes.

Q. Would not be observed, unless you brought the two together?

A. I doubt very much if I could tell them separately.

Q. But you could, if they were put together? A. Yes.

Q. Now, if you bleach the long, and did not bleach the other, could you bring the long one to a lighter color? I do not mean the same color, but a color as light or lighter?

A. I think you could probably make it a lighter color, but there would still be a difference in color.

Q. The bleaching color is not a natural color—not the same as the natural color?

A. Well, now, I don't know, but what if flour was aged long enough, it would reach practically the same color as bleaching.

Q. No, but I am speaking now, from general observation. As the thing is handled, it is not identical? I got that impression from other witnesses?

A. I guess I do not understand your question.

Q. My point is this: Some witnesses, called by the side of the case that you are on, gave me the impression that, while it might be lighter, it is not just the same color.

A. As the unbleached?

Q. Yes. A. Oh, no. There would be a little difference.

Q. But, in the unbleached, there is that creamy color?

A. Yes, it has a little creamy shade, what you would call it.

Q. Now, have you observed whether or not your wheat—you, of course, concede what has been said so often here, that natural aging improves the quality of flour? I am not speaking of color.

A. I think that flour naturally aged would work better in the dough, than flour freshly milled.

1803 Q. Generally speaking—I am not going into the whys and the wherefores but the fact is it is better flour?

A. We always thought this, if we can age flour before we put it on the market, it is more sure to give satisfaction.

Q. Now, I want to find out from you, Mr. Larabee, whether or not flour, after you have bleached it, improves with age.

A. Well, Mr. Butler, my opinion would be that there might be some improvement but not as marked as in the unbleached flour. Now, how much that improvement might be, I do not know.

Q. Of course, those are very hard things to define in words?

A. Of course, they get rather delicate, too. The question of comparing flour a month old to one three months old, is a delicate one, and I would not be competent to do that.

Q. You cannot say then, that any degree of bleaching is the equivalent of any degree of aging?

A. I think our observation has been that to bleach our flour will insure its giving practically the same satisfaction as flour from thirty to sixty days old.

Q. But, unbleached flour improves for a period much longer than that?

A. Well, that might be. I have never made any tests along those lines, because we seldom keep flour any great length of time.

Q. Never did, either, did you? A. Never did.

Q. Keep it a great length of time?

A. No. No great length of time.

Q. Long before this bleaching commenced, it was your practice to unload your product right along?

A. Before bleaching commenced, Mr. Butler, we used to carry over—we were obliged to carry over large stocks of old wheat, to tide us over.

Q. I was speaking more particularly of the flour. As to whether you carried flour in stock?

A. Not as a usual thing, no.

Q. That was the practice of your mill, and the practice of mills generally; long before the Alsop bleaching business was introduced to get rid of their flour very soon after milling?

A. The sooner a man can turn his product, the better the profits are.

1804 Q. And they get rid of it very soon—in a week, or three weeks, on an average?

A. I can only speak for ourselves.

Q. That was the fact, wasn't it?

A. Yes, we usually got rid of it in that time, I should say.

Q. So, before the bleaching commenced at all, it was your experience, and, as far as you know, the experience of mills generally, that they got rid of their product in a week or two or three?

A. The fact of it is Mr. Butler, most of our flour is loaded right into the car from the factory.

Q. And always was? A. And always was.

Q. And that was the truth, long before the bleaching, with yours and other mills, so far as you know? A. Yes, sir.

Q. The ordinary consumer could not tell your long patent from your short patent, if neither was bleached, in all probability, could he?

A. Well, there would still be that difference in color.

Q. I know, but seeing them separately.

A. Oh, seeing them separately?

Q. Yes.

A. Well, it is a question in my mind whether they could or not.

Q. You could, yourself? A. I doubt it.

Q. Nobody could, probably?

A. I might, if I happened to, but I could not—

Q. (Interrupting) Now, I want to ask you this, by reason of your candor and great interest in this matter, if you know what a cut straight is, in the first place.

A. Yes, I know what millers term a cut straight, and I think I know the man that originated the phrase.

Q. We don't care about that.

A. It has only been in use a limited number of years.

Q. Now, to sell a cut straight for a straight, is a cheat, isn't it?

A. Well, Mr. Butler, now, in selling cut straights, my experience has been that they are usually sold on sample.

Q. Well, I know, but that is not responsive to the question.

Mr. Scarritt: Let him answer.

1805 Mr. Butler: I know, even if this gentleman is paying you, he is not entitled to talk, except in response to my questions.

Mr. Scarritt: Why, certainly, he is.

A. I think I understand the question. If a man—

By Mr. Butler:

Q. (Interrupting) I asked you, to sell a cut straight—

A. (Interrupting) Let me make my answer.

Q. Here is my question. A. Yes.

Q. Do you think that, to sell a cut straight as and for a straight is a cheat?

A. A man that would do that is misrepresenting, certainly.

Q. Yes.

A. Yes, sir, he is. Now, if you will let me explain why it is a cheat, or why not a cheat. I think it is all in how it is sold. If I had a request for that kind of flour, and I sold it I would not think it a cheat, but, if I would sell a cut straight, and represent it to be a straight, that would certainly be misrepresenting.

Q. I am not implying, Mr. Larabee, and have nothing in mind as to any such practice claimed against your concern at all. Not at all. A. I understand.

Q. I am just seeing what you think of these things. Now, if you were to take a straight grade of flour, made from old wheat, and new wheat mixed and add to that a clear, made from some other flour, of fifteen per cent, and bleached it to make it look white, and sold it as and for a high patent, whether or not that is not a cheat, deception, and a fraud?

A. That is not a reputable thing to do.

Q. That is a bad thing? It is a swindle on its face?

A. Yes, sir. I would not do it.

Q. Now, is it not by means of the bleaching process, or any other device, a deception, misrepresentation and a fraud, to sell the inferior flour from one wheat as and for a flour made from a better wheat?

Mr. Scarritt: We object to that, incompetent, irrelevant and immaterial, and invading the province of the jury, asking the witness to decide the very question the jury is to decide.

1806

The Court: On one of those grounds, but not upon all of them, the objection is sustained.

By Mr. Butler:

Q. Now, Mr. Larabee, if inferior wheat—and I ask you to assume that the flour made from inferior wheat may be bleached by the Alsop process so as to simulate the appearance of flour made from a better wheat, the degree of simulation being such that the ordinary, unskilled purchaser, non-expert purchaser, cannot tell the difference—now, assuming those facts to be true—you are not responsible for whether they are true or not—but assuming them to be true, then, I ask you if that bleaching process is not used to conceal inferiority and to deceive.

Mr. Scarritt: We object to that, if Your Honor please, for the same reasons.

The Court: He may answer that. The substance of the question is whether it conceals inferiority. He may answer it.

Mr. Scarritt: That is for the jury to decide.

The Court: No, it is for the witness to say.

A. No, I do not think, Mr. Butler, you could conceal inferior flour by bleaching.

Mr. Butler: I move to strike that out as not responsive, because I asked him to assume that.

The Court: Yes, that is not an answer.

A. (Continuing) I will have to have the question read.

Q. Let me state it again, and perhaps I will make it a little clearer as I go along. Now, I am asking you a question as an expert. I am going to ask your opinion upon an assumed state of facts, which I ask you to assume—not whether they are true or not—we will leave that to the jury, but I will ask you to assume that to be true, that the bleaching and whitening of flour by the Alsop process make the darker colored flours from inferior wheats simulate the appearance of the lighter colored flours, from better wheats, and that the degree of simulation is such that the ordinary non-expert flour purchaser cannot detect the difference between them. Now, assuming those facts to be true, I ask you if the Alsop process has not thereby, as a practical matter, concealed inferiority and misled the purchaser.

1807

Mr. Scarritt: We object to that, if Your Honor please, as incompetent, irrelevant and immaterial, and not stating in the hypothetical question the facts in the case, and as invading the province of the jury, and asking the witness to determine the very question and issue made under these pleadings, which the jury alone can decide.

The Court: Objection is overruled, and the witness may answer.

A. May I ask a question?

By Mr. Butler:

Q. Certainly. A. This simulation is in color only?

Q. In appearance? Simulation of appearance.

A. Well, the appearance of a flour might not be all in the flour.

Q. Well, that is the reason I said appearance. I wanted to be perfectly fair with you.

A. That is a hard question for me to answer, Mr. Butler, just to be honest with you.

Q. I intended that it should be, but I intended it should be so framed that it could not be answered but in just one way. Now, isn't it?

A. There are so many things that come in to qualify the appearance of the flour.

Q. I asked you to assume that.

Mr. Helm: Do you ask Mr. Butler that he assume the turkey wheat made the poor flour?

The Court: Now, gentlemen, let us get along.

Mr. Helm: The evidence is all to the contrary.

A. That is a hard question to answer, yes or no.

By the Court:

Q. Well, Mr. Witness, answer it yes or no, or that you don't know. A. Well, I don't know.

1808 Redirect Examination

By Mr. Elliott:

Q. Now, Mr. Larabee, I will ask you if, in your judgment, flour ground from new wheat is improved by bleaching.

Mr. Butler: I object to that as not redirect. I did not ask him whether any flour was improved by bleaching.

The Court: It is a new matter. If course, if you overlooked it, you may go into that.

Mr. Elliott: Well, it was really preliminary to another question.

The Court: Let us get on. You recall the witness, then.

Mr. Elliott: Yes.

The Court: All right.

By Mr. Elliott:

Q. Now, I will ask you if a flour ground from new wheat, is, in your judgment, improved by bleaching.

A. Yes, I think it is improved.

Q. Now, prior to the introduction of any bleaching process, I will ask you, what the practice of millers in repect of grinding new wheat, if any, as to obviating putting out this new flour, or flour from new wheat.

Mr. Butler: Now, that is clearly immaterial. Can it be, Your Honor, in a trial charging adulteration under these sections of the statute, that considerations of that kind shall weigh in the minds of the court and jury?

The Court: He may answer.

A. We usually carried over sufficient old wheat, to enable us to get into the new crop, when it was in a proper condition to grind.

By Mr. Scarritt:

Q. Storage, you mean? Warehouse? A. Yes.

The Court: And your answer is the bleaching saves this interest, and storage charges? I see.

1809 Mr. Helm: And gives satisfaction to the customers.

Mr. Butler: I move to strike out the statement of Mr. Helm "And gives satisfaction to the customers" as impertinent and irrelevant. Mere interruption. Every time I rise to examine a witness, he interrupts, and talks, and he has not done anything in this trial, since Krite left the stand, but interrupt, and I insist we must not be interrupted in that way.

The Court: That is Mr. Helm's statement, not the witness's. it saves interest charges, and storage charges.

By Mr. Elliott:

Q. I will ask you, before bleaching,—you answered Mr. Butler that it was your custom to put all of your flour out into the market as soon as possible,—if, at the time of the new wheat crop, you would have that old wheat to carry over, and mix with a new wheat, to obviate the difficulty of putting out new flour from new wheat, is that it? A. That is the idea.

Q. Now, Mr. Butler asked you to assume that a dark flour—I will not attempt to give the exact language, but I think this is the substance of it—to assume that a dark flour, from an inferior wheat, is bleached, and made to simulate the appearance of a lighter flour, from a superior [flour]. I will ask you if, as a matter of fact, a dark flour, from an inferior wheat, by bleaching, can be given or made to simulate the appearance of a lighter flour, from a superior wheat, unbleached.

Mr. Butler: That is objected to for this reason. It is clearly in the form of redirect examination. When they called Mr. Larabee to the stand, they did not ask him any such question.

The Court: My understanding is he is recalling the witness.

Mr. Butler: But, Your Honor, then I assumed the testimony of the other witnesses, on the other side of the case, and asked him to assume it as a fact and give us his opinion, and he said he could not answer, and that dropped it. Now, that certainly does not open the door for Mr. Elliott, on redirect examination, to traverse that assumption.

1810 The Court: No.

Mr. Butler: They elected not to ask Mr. Larabee that question, and I had a right to call for his opinion on the testimony of Mr. Edgecomb, and of Mr. Holderidge, and a score of other millers, but he could not answer it.

The Court: But, Mr. Butler, this witness is now being called for the first time, by reason of what Mr. Elliott impliedly said, it was an oversight.

Mr. Butler: But he based it on my cross-examination.

The Court: Well, let us go on. This is an original question.

Mr. Butler: Let it be framed as an original question.

Mr. Elliott: I will withdraw that question.

The Court: You would not have the right to frame an original question on his cross-examination.

By Mr. Elliott:

Q. I will ask you if in your judgment a dark flour, from inferior wheat, can be bleached, and made to simulate the appearance of a lighter flour, from a superior wheat.

A. No, I doubt that very much.

Recross Examination

By Mr. Butler:

Q. Is flour from the new wheat, from the harvest fields, darker than it will be from the same wheat, later on, in color?

A. I am not sure I can answer that. I would rather think it would be. That would be my impression.

Q. And you know it is inferior then, don't you?

A. No, I would not say it was inferior, but it needs perhaps a little age on the flour.

Q. In order to improve its inferiority?

A. I do not know as you could call it an inferiority, or not. It is the best you can get out of the wheat.

1811 Q. But, as compared with flour made from the same wheat, which has been conditioned, it is inferior?

A. Well, if you condition your flour, to the same length of time you do your wheat, it would probably be equal to it.

Q. Then, let me see if I understand you. You say, then, that the flour from the new wheat is not inferior?

A. Well, I say I would not want to say that it was inferior. It does not work as well. We admit that,—the millers admit that.

Q. Is it inferior in color, or quality.

A. Well, I don't know that I could call it any inferiority. It is not as ready to work. Now, we all have to admit that. If you call that an inferiority, why then, it would be.

Q. Doesn't bleaching make that simulate the appearance and characteristics of flour made from aged and conditioned wheat?

A. Well, it puts practically the same quality in it, I should say from the standpoint of a person working the flour; that it is a defect in the wheat; that it is defective at this time, in that it still lacks a little of the age.

Q. Doesn't it make it simulate the appearance and characteristics in every particular?

A. I think it would work a great deal like that, if not quite like it.

Q. So, then, the bleaching of the flour made from the new wheat, makes it simulate the characteristics and appearance of flour made from the same wheat that has been naturally conditioned?

A. Well, I think the flour would work a good deal the same, yes, sir.

Q. And appear a good deal the same?

A. Yes, appear a good deal the same.

Thereupon court stood adjourned to ten o'clock A. M. Friday, June 24, 1910.

1812 Pursuant to adjournment court met at 10 o'clock A. M. Friday, June 24th, 1910, and proceeded with the trial of said cause further as follows:

Addie Buck, called as a witness on behalf of the claimants, being first duly sworn, testified as follows:

Direct Examination

By Mr. Scarritt:

Q. Just state your full name to the court and jury, Mrs. Buck.

A. Addi Buck, or E. M. Buck, is my husband's name.

Q. Where do you reside?

A. One mile from Green Castle.

Q. A mile from Green Castle, in Missouri?

A. Yes, sir.

Q. You spoke of your husband. You have a family, have you? A. Yes, sir.

Q. You and your husband and how many children?

A. Two children.

Q. Do you know Mr. Terry, of Green Castle, the grocery-man?

A. Yes, sir. We do all our trading there.

Q. I will get you to state if you bought any flour from him along about the 7th, 8th or 9th of April, 1910?

A. My husband did.

Q. Did you use it? A. Yes, sir.

Q. What kind of flour was it?

A. It came from the Lexington Mills, Lexington, Nebraska, and was a Cream 5-X flour.

Q. Lexington Mill, Cream 5-X flour. A. Yes, sir.

Q. How much did you get at that time?

A. Well, my husband brought out at that time three sacks, two for my father, and one for ousleves.

Q. Brought out three sacks, one for yourselves—for your own family, and two for your father's family?

A. Yes, sir.

Q. Where did your father live, with reference to your residence? A. Just across the road.

Q. About a mile from Castle?

A. Yes, sir, just across the road

1813 Q. You live on a farm, do you? A. Yes, sir.

Q. And your father lives on another farm?

A. Yes, sir, just a small farm.

Q. Your father is a very old man, is he?

A. Yes, sir, a retired farmer.

Q. Did you use this sack of flour that you bought from Mr. Terry, that is, the Lexington Cream 5-X flour?

A. Yes, sir.

Q. How did you find it with reference to its baking qualities? A. I found it just fine.
Q. I will ask you if you do your own cooking?
A. Yes, sir, I do all my own cooking.
Q. How did you find this flour with reference to other flours that you had used theretofore?
A. I found it whiter.
Q. How, with reference to its baking qualities?
A. Well, it baked as nice as any flour I ever used.
Q. Was the quality of the bread made from this flour, such as to attract your attention, or was it just the ordinary?
A. No, sir, it was so much better, that my husband called the attention of the family to what fine bread it made, and after he had eaten some of it, he said what a fine taste it had.
Q. Not what your husband said.

Mr. Butler: I guess we will strike out what her husband said, as hearsay.

The Court: It may be stricken out.

A. And I said I had tasted it before.

Mr. Butler: Wait a minute. I guess we will move to strike out the conversations between you and Mr. Buck.

The Court: That may be stricken out.

By Mr. Scarritt:
Q. Now, you did state, and that is not stricken out, as I understand it, that your attention was called to the quality of the bread? A. Yes, my attention was called to it.
Q. Now, what was the quality of the bread made from this flour, from your own statement, and your own attention?
1814 A. It had a better taste to it than any flour that we had used for a long time.
Q. Did you try to get some more of it?
A. Yes, sir. We were intending to go back and get several sacks of it, the next time we went to town.
Q. What for? A. Well, it was so good.
Q. Now, these two sacks that were bought for your father. Were they delivered to your father? A. Yes, sir.
Q. And did he and his family use them?
A. Yes, sir, they used them.
Q. Now, have you made any bread out of that flour, and have you any bread here made out of that flour?
A. Yes, I have some (producing same).
Q. Is this bread that I hand you now, Mrs. Buck, the bread that was made out of the Lexington Cream 5-X Flour that you bought from Terry? A. Yes, sir.

Mr. Scarritt: I will have this marked as an exhibit.

Exhibit referred to was then marked by the reporter Claimants' Exhibit 250.

By Mr. Scarritt:

Q. Both of these loaves are made out of the same flour?
A. Yes, sir.
Q. At the same time? A. Yes, sir.
Q. How hastily did you make this bread?
A. I had to hurry the bread, and it isn't as good as I have been baking, because I had to make the train, and I had to hurry the bread.
Q. Now, just smell that bread.

(The witness does as requested.)

Q. Is there any sour smell there?
A. Nothing that I can see is wrong.
Q. No rancid smell there? A. Nothing that I can see.
Q. Any sour taste to this flour, when it was made up into bread? A. No, sir.
Q. Any rancid taste, or rancid smell?
A. Not that I could detect.
Q. I wish you would just cut off a couple of slices of that bread, and pass it to the jury.

(Witness does as requested.)

1815 Q. Would you mind having the jury taste this?
A. No, sir.
Q. Did you deliver any part of this flour to Mrs. Charles Kidwell, one of your neighbors, to be cooked? A. Yes, sir.

Cross-Examination

By Mr. Butler:

Q. Mrs. Buck, did you ever before have bleached flour that you know of?
A. Not that I know of. I don't know anything about it.
Q. And this flour tasted differently from other flour that you have had. A. Had a better taste to it.
Q. Yes, you think it has a better taste, but it is distinctly a different taste?
A. Well, it has a better taste. That is all I can tell you.
Q. And very much better, isn't it?
A. Yes, sir, it is better, considerably.
Q. So, therefore, it is very much different, isn't it?
A. Well, it has a good taste about it.
Q. The children are well, Mrs. Buck?
A. Yes, sir, and very hearty.

Mrs. Charles Kidwell, being called as a witness on behalf of the claimants, being first duly sworn, testified as follows:

Direct Examination

By Mr. Scarritt:

Q. Your name is Mrs. Charles Kidwell? A. Yes, sir.
Q. You live at Castle, Missouri? A. Yes, sir.
Q. You have a family? A. One child.
Q. And a husband? A. Yes, sir.
Q. You have a husband? A. Yes, sir.
1816 Q. How long have you been living at Castle, Missouri?
A. Eight years.
Q. Do you know how long Mrs. Buck has been living there?
A. No, sir, I do not.
Q. Longer than you have, hasn't she? A. Yes, sir.
Q. Did you buy any of this flour from Mr. Terry, that was the Lexington Cream 5-X Flour? A. Yes, sir.
Q. How much of it did you buy? A. One sack.
Q. What did you do with that sack of flour?
A. I used it and made bread of it.
Q. Do you do your own cooking? A. Yes, sir.
Q. What kind of bread did it make? A. Good bread.
Q. Did you use the whole sack up? A. Yes, sir.
Q. Did you send for more, or want to send for more?
A. No, we did not.
Q. Did you want more? A. Yes, sir.
Q. But you found out it has been seized, and you could not get any more? A. Yes, sir.
Q. How was that flour, with reference to its bread baking qualities, Mrs. Kidwell, what kind of bread did it make?
A. It made good bread.
Q. Well, in comparison with other flours that you had used?
A. Well, the bread was whiter than other flours.
Q. How was it with reference to its strength and quality?
A. It was good.
Q. And taste?
A. Well, it was good—had a good taste.
Q. Did it have any rancid taste or smell about it?
A. No, not that I know of.
Q. Did it smell like rancid butter, or lard? A. No, sir.
Q. Did it taste like it? A. No, sir.
Q. Now, Mrs. Buck gave you some of this flour? You had used up all of your sack, hadn't you, when we asked you to make some bread out of that, you had used it all up? A. Yes, sir.
Q. And Mrs. Buck gave you some, as she has testified. What did you do with that? A. I made bread of it.
1817 Q. Have you got that bread here? A. Yes, sir.
Q. Before producing that bread, I will ask you if this flour that you bought and used gave satisfaction? A. Yes, sir.
Q. I will get you to state if it gave you as good or greater satisfaction than any flour you had ever used?

Mr. Butler: Objected to as calling for a conclusion. I have no objection to her telling whether it tasted differently, or not.

The Court: Objection sustained.

By Mr. Scarritt:

Q. You say it gave perfect satisfaction? A. Yes, sir.

Mr. Butler: I thought that was sustained.

The Court: I sustained it as to the comparison. That may stand.

By Mr. Scarritt:

Q. Now, you used it every day? A. Yes, sir.

Q. On your table? A. Yes, sir.

Q. (Handing the witness a loaf of bread) Now, is this the loaf that you made out of this flour? A. Yes, sir.

Q. That seems to be in kind of a twin loaf, too, isn't it? Will you break it open.

(Witness does as requested.)

Mr. Scarritt: We will mark these two loaves Exhibit 252.

Q. Will you cut that? (Witness does as requested.)

Q. Cut a slice of it, will you please, and hand it to the jury?

(Witness does as requested.)

Q. What kind of a stove did you cook this bread in?

A. I baked it on a wood stove.

Q. Just an ordinary wood stove? A. Yes, sir.

Q. Cooked it in the oven? A. Yes, sir.

Q. Just like a housewife ordinarily cooks it? A. Yes, sir.

Q. Is your family quite well, I will ask you? A. Yes, sir.

Cross-Examination

1818 By Mr. Butler:

Q. When was Judge Scarritt down to your place. He says he asked you to make this flour into bread. When did the Judge come down?

Mr. Scarritt: I said "we", Mr. Butler.

Mr. Butler: You did not mean Alsop, did you? You mean yourself among others, don't you?

Q. When was Judge Scarritt down there and asked you to make this bread? A. He never asked me.

Q. Have you any idea whom he did mean when he said "we"?

(No response.)

Mr. Butler: That will be all.

A Juror: Did you ever have any flour you could not make pretty good bread out of?

A. I am a pretty good bread baker.

The Juror: What is that?

A. I can bake pretty good, light bread. I have used flour I could not make very good bread out of.

By Mr. Scarritt:

Q. Now, that brings us back to the question of whether this means better bread,—whether you made better bread out of this flour, than you do others? A. It is whiter, I believe.

Q. The same quality and strength? A. Yes.

Recross Examination

By Mr. Butler:

Q. You said you did have some flour that would not make good bread?

A. I have used flour that did not make very good bread.

Q. Made pretty good, but not as good as some others.

A. Not as good as this.

Q. Do you know whether that flour that would not make good bread was adulterated by putting the white part of the corn in it? A. No, sir.

Q. Were you familiar with the fact that the mill did,
1819 sometimes take the hominy grits, to the extent of twenty to forty per cent, and put it in wheat flour, and make it like wheat, and sell it as wheat flour? A. No, sir.

Q. You do not know whether that is the kind you failed on, or not? A. No, sir.

Witness excused.

Mrs. L. P. Houston, called as a witness on behalf of the claimants, being first duly sworn, testified as follows:

Direct Examination.

By Mr. Scarritt:

Q. Your name is Mrs. L. P. Houston? A. Yes, sir.

Q. And you live near Castle, in the state of Missouri?

A. Mile and a half west of Castle.

Q. On a farm? A. Yes, sir.

Q. Have you a family?

A. Yes, sir, I have got four children and my husband and myself.

Q. Your husband and yourself and four children?

A. Yes, sir.

Q. How long have you lived in that neighborhood?

A. Well, we have lived there about five years, and then we moved away and came back, and have been living there two years now. Been there seven years altogether.

Q. How large a place is Castle?

A. Well, I don't know as I could tell you just exactly.

Q. A small place, isn't it?

A. Just a small place, yes, sir.

Q. Did your family use any of this Lexington Cream 5-X flour from Mr. Terry's store? A. Yes, sir, one sack.

Q. You obtained one sack? A. Yes, sir.

1820 Q. And did you use it up? A. Yes, sir.

Q. What kind of bread did it make?

A. Made good bread.

Q. Did you attempt to get some more? A. We did.

Q. When you found out what kind of bread it made?

A. Yes, sir.

Q. Why did you do that?

A. Because it was good, and we wanted more.

Mr. Butler: He object to that.

Mr. Scarritt: These are consumers.

The Court: Oh, the point to it all is, she was satisfied with the flour.

Mr. Scarritt: That is not the only point.

The Court: Well, go on. I do not see any other point to it.

By Mr. Scarritt:

Q. What was the nature and character of the bread made from that flour?

A. Well, it was whiter than what we had been using.

Q. How was it as to taste?

A. It was all right. It was good.

Q. Flavor? A. All right.

Q. And smell? A. All right.

Q. And I will get you to state whether or not it gave entire satisfaction or not? A. It did.

Q. I will get you to state what its qualities were as to cooking, baking up and cooking in the oven?

A. Well, it was good.

Q. What kind of oven do you use? A. I had a range.

Q. How? A. I have a range.

The Court: Cook stove?

A. Wood or coal, either.

The Court: Wood or soft coal?

A. Yes, sir, soft coal.

By Mr. Scarritt:

Q. What do you use?

A. Use wood, mostly. I did when I was baking that.

Q. In baking this? A. Yes.

1821 Q. Did you get any of this "Purity" flour from Mr. Terry, after the other was seized? A. Yes, sir.

Q. How did it compare, in baking qualities, with the bleached flour? A. Was not as good.

Q. Baked and doughed in the same way, and in the same oven and everything alike? A. Yes, sir.

Cross-Examination

By Mr. Butler:

Q. When did you get the "Purity"?

A. I think it was the 8th of April. I am sure it was.

Q. I meant the last sack of "Purity".

Mr. Scarritt: He meant the "Purity". Not the Lexington.

A. Oh, the "Purity". We have used two or three sacks of that. I don't know just exactly when we got the first sack. It was just after we got through using the Cream. Quite a number of us, and it don't take long to use a sack of flour.

Q. Are you using the "Purity" yet?

A. Yes sir, and we have been using it since we could not get the "Cream."

Witness excused.

Orlando M. Friend, called as a witness on behalf of the claimants, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Elliott:

Q. Where do you reside, Mr. Friend?

A. Hannibal, Missouri.

Q. What is your business?

A. In the milling business.

1822 Q. What is the name of your mill?

A. Hannibal Milling Company.

Q. What is the capacity, in barrels, of that mill?

A. Make between seven and eight hundred barrels a day.

Q. Between seven and eight hundred barrels a day?

A. Yes, sir.

Q. Are you a practical miller? A. Yes, sir.

Q. How long have you been a practical miller, or engaged in milling?

A. I should say in the neighborhood of thirty-five years.

Q. Do you use an Alsop bleacher? A. I did.

Q. How long have you had that machine in your mill?

A. In the neighborhood of six years, I guess. We were amoung the first to put it in.

Q. You have made flour in your mill, bleached by this Alsop process? A. Yes, sir.

Q. I will ask you, Mr. Friend, what effect have you observed if any, that bleaching has on flour? What effect or effects?

A. It ages the flour. It aerates it, makes it whiter, dries it out some, increases the absorption qualities of it, I should say.

Q. Have you noticed any difference in the dough made from bleached flour, as compared with the same flour unbleached?

A. I would say the dough was more elastic, has more toughness in it, from the fact it is dried out more, by aeriation.

Q. We have some testimony here relative to aging the flour by storing it. I want to ask you what happens to flour when aged by storing it? Now, understand I do not mean bleached. I mean flour as it is ground, and aged by storing it. What would you say happens to that flour?

A. It whitens, and loses some of its moisture, I should say, dries out some.

Q. Now, does aging flour by storage always improve it?

A. Well, in some cases I would say yes, and others I would say it did not.

Q. Now, tell us which case you say won't and which the other?

A. I would say that higher grades of flour, stored and subjected to atmospheric conditions, or in the atmosphere, would grow better, would grow whiter. I would say flour milled from unsound wheats, more diseased wheats, more low grade wheats, would not become better. I should say they would deteriorate, rather than grow better.

1823 Q. Now, what about this process. Does that improve all flours—all kinds of flours?

The Court: The Alsop process?

By Mr. Elliott:

Q. Yes, sir, the Alsop process, I mean.

A. I should say it did not.

Q. Tell us, as you have done in the other case, what distinctions do you make if any?

A. Just as I stated a moment ago, I should say that high grade flours, more flours milled from good wheat, were improved by the process. Flours that were milled from unsound wheat would not be improved by it, from the fact that unsound or diseased wheats are inclined to make a blue, soft, undesirable

color, and the process would improve that—the objectionable color, I should say.

Q. And that, as I understand it would be the same as if it was aged naturally? A. Yes, sir.

Mr. Butler: I move to strike that out, as offensively leading.

The Court: That last part is very leading,

By Mr. Elliott:

Q. Would that same result follow, if you had let that unsound flour age naturally?

A. I would say that it would. I would say that it would still be an objectionable color.

Q. From the fact that unsound or diseased wheats are inclined to make a blue, soft, undesirable color, and the process would make that the objectionable color, more apparent, I should say.

[Q And as I understand it, that would be the same as if it was aged naturally? A. Yes, sir.

Mr. Butler: I move to strike that out as offensively leading.

The Court: That last part is very leading.

By Mr. Elliott:

Q. Would that same result follow, if you had let that
1824 unsound flour age naturally?

A. I would say that it would. I would say that it would still be an objectionable color.]

Q. Now, how do atmospheric conditions, and manner of package of flour affect its improvement, by storage?

A. Well, I would say that you could take flour, and put it in small quantities, subject it to the air, and it would bleach out readily. If it packed in loose packages, why, it probably would not show so much aging, and, if it was packed in a parrel, where it was almost excluded from the air, it would still take a greater length of time. If it was bottled up, I do not know whether it would bleach or not. That is questionable.

Q. What do you mean by "bottled up"?

A. Well, I mean excluding it from the atmospheric conditions.

Q. Now, aside from these improvenments you have referred to—that is, aside from improving the flour in color, and aging it, by this Aisop process—what other advantages, if any, have you noted in the use of this Alsop process?

A. I would say there were other advantages. Without the use of the process, to make flour white, you would have to grind it very fine, and it would make it soft, of a soapy nature, and would impair the quality somewhat, and, by the use of the

process, you can grind more granular and make a livelier, more free, and suitable flour, and would make it more acceptable, I would think.

Q. Now, as compared with the finely ground flour is a granular flour preferred by the miller? A. I think so.

Q. Now, suppose you take a flour that is more or less granular, and assume that it has a certain degree of yellow color in it, and suppose that flour be ground down to a more powdery form—finer—I will ask you what change, if any, does that make in the color of that flour?

A. Well, it would whiten it.

Q. Whiten, or lighten the flour?

A. Lighten the color, yes.

Q. Now, what effect does that fine grinding have on the quality of the flour?

A. We think it impairs the qualities of it. As millers we always try to keep a free, loose, lively flour, to re-
1825 tain all the strength that there is in the grain in the flour—a granular, free flour is more acceptable flour than one that is very soft, because, if it is soft, it becomes what you might term heavy flour. It hasn't got the life in it.

Q. Is the granular flour lighter, or darker in color, than the more finely ground flour?

A. It is not so light in color. The color comes from the breaking down of the granules, when using greater pressure on your rolls, setting them closer together.

Q. Now, assuming that a miller wants to make his flour white by grinding it fine, I will ask you if that involves any more expenditure and horse power, than where he grinds a more granular flour?

Mr. Butler: I think we will object to that. I do not think ..... of the situation have anything to do with that.

Mr. Elliott: I think it has.

The Court: I will allow them to put this evidence in, but the question, in my judgment, is not as to what is to the advantage of the miller.

A. It requires a greater amount of horse power, to grind flour fine, than it does to grind it more granulous, because you open up your rolls, by pulling them back—letting them back, relieving the pressure, and thereby relieving the frictional load, and a frictional load, of course, means horse power, and horse power costs money to make. You have to buy coal to generate the steam and make horse power, and there is a degree of economy along that line, I would say.

Mr. Butler: I think I will move to strike this all out.

The Court: It may stand, subject to what I will charge the jury in reference to this.

By Mr. Elliott:

Q. To what class of people do you sell your flour?

A. Well, I should say it was quite a variety. We sell in the local trade around home, and out through the state of Missouri. We go in the southeastern territory. We go into the southwestern territory, and we go abroad with some 1826 of it.

Q. Now, I meant more in this sense,—as between what you might term a family trade, or some other class of trade. Which do you have largely?

A. I should judge ours was more for the family trade.

Q. Now, I will ask you, does your trade express a preference for any particular character of flour, and if so what kind?

Mr. Butler: Objected to as hearsay, irrelevant and immaterial, and calling for a conclusion.

The Court: Well, I will hear what he has to say.

By Mr. Elliott:

Q. Does your trade express a preference for any particular character of flour, and if so what kind?

A. Our trade has been for bleached flour very largely.

By the Court:

Q. Do you advertise bleached flour?

A. We notify every customer—

Q. (interrupting) I ask you if you advertise bleached flour?

A. We don't advertise it, but we notify everyone of our bleaching, when we bleach, and when we don't.

By Mr. Butler:

Q. By a sign on your sack? A. No, sir.

By Mr. Elliott:

Q. I will ask you, Mr. Friend, if you have ever noticed any foreign odor in flour that has been bleached, as a result of the bleaching? A. I have not.

Q. I will ask you if you have ever compared bread made from bleached and unbleached flours, and if so, if you have ever noticed any difference in the smell, or in the taste [or] such bread?

A. I have made numerous comparisons.

Q. With what result?

A. I have never been able to detect any odor on that bread, whatever, from the use of the gas.

Q. And, about the taste?

A. Or taste, either.

1827 Q. Do you use bleached flour in your own family?

A. I certainly do.

Q. Suppose you take several grades of flour, as you might have them in your mill, and bleach all of them. I will ask you what result follows, as to the relative color of those various grades?

A. I should say that they retain their relative difference, unless it might be on some of the lower grades, or that which had more fibrous matter in it, it would not show so much difference. If it had less, it would show more. Fibrous matter is not so susceptible to the bleach as pure flour—the purer the flour, the more susceptible to the bleach.

Q. Now, I will state to you that there has been some testimony here about bleaching flour a little, making it a little whiter, and bleaching it some more and making it a little more whiter, and bleaching it still more, and making it still more whiter, and so on. I want to ask you do I understand bleaching the flour by this Alsop process changes the color of the flour?

A. Well, it makes it lighter in color, but I suppose if you would compare it with something white, it would still be of a yellow color still. It would still have the golden color to it.

Q. Have you recently visited the Rex Mills?

A. Yes, sir.

Q. I will ask you if you looked at the gas, or the gaseous medium coming from that mill, to ascertain if you could see any color in it, and if so, state with what result?

A. I visited there, the afternoon, and spent the larger part of the afternoon there, and the gas was exposed, and as far as I could discern, it was transparent. I could not see anything—anything at all. When we first opened up the pipe, I should say some dust fell out of it,—some powder, when we first took out the plug, but, after the plug was removed, and the flour dust blowed away, the gas was transparent—just like the air.

Q. Have you brought into court some of your bread?

A. I have some present, yes, sir.

Q. Will you please produce it?

1828 (Witness produces exhibits, which are marked by the reporter Claimants' Exhibits 254 and 255.)

Q. Now, I hand you two loaves of bread, marked Exhibit 254 and 255, and ask you to state what they are.

A. They are what we call our "Housekeeper's Delight" brand of flour. One is the bleached and the other is not.

Q. Now, state which is made from the bleached, and which the unbleached.

A. Exhibit 255 is the bleached, and 254 is the unbleached.
Q. 254 is the unbleached, and 255 is the bleached. Now, who baked this bread?
A. It was baked by the laboratories in this city, and A. W. Esterbrooks, is it?

Mr. Scarritt: Yes, that is right.

By Mr. Elliott:
Q. Did you bring that flour here, and give it to Mr. Esterbrooks? A. I did, in person.
Q. Now, did these cut loaves correspond with the other two loaves? A. Identically the same.

Mr. Elliott: I introduce these in evidence. I will show the cut loaves if there is no objection. (Does so)

Mr. Elliott: I will state, if your Honor please, that we will produce Mr. Esterbrooks, and he will tell how he made them.

The Court: Very well.

Cross-Examination

By Mr. Butler:
Q. Do you grind the soft winter wheat? A. Yes, sir.
Q. Producing the whitest flour in the world, doesn't it?
A. Well, I guess it makes pretty white flour.
Q. Well, I stated it right, didn't I?
A. I don't know of anything that makes any better flour —any whiter flour, no, sir.
Q. Are you familiar with bleaching wheat by sulphur fumes? A. I am not.
1829 Q. Have you ever heard of putting products of corn in flour? A. I have.
Q. The hominy grits, or corn grits,—the white portion of the corn?
A. I don't know that I ever heard of putting any corn grits, or hominy, but I have put—heard of putting in corn flour. I suppose it was made from corn grits.
Q. Have you done it? A. No, sir.
Q. The reason I asked you that, was the form your last phrase took, at first. That made the wheat flour better, I suppose? A. I hardly think so.
Q. Don't you suppose you could get the millers who did that to come into court with loaves of bread, and the women who had it, to say it gave satisfaction?

Mr. Elliott: I object to that question, if your Honor please.

The Court: He may answer it.

A. Just state the question, please.

Last question read by the reporter.

Mr. Scarritt: Objected to, as calling for what other witnesses might do or say.

Mr. Butler: Well, let it go.

Q. What percentage were they accustomed to put in?
A. I never attacked that proposition.
Q. I know you did not.
A. But I guess some of it was pretty badly plugged. I have understood so, although I never was guilty of adulteration.
Q. Forty per cent?
A. I should not say as to the per cent. I have understood some of it was so badly plugged up with corn flour that it would scarcely make a dough.
Q. Would not rise very boldly?
A. No, sir, I would not think so. But that has been years ago.
Q. Made it white, didn't it?
A. I guess it did. I never had anything to do with a mixture of corn flour and wheat flour. I suffered, I guess, financially, by not doing it. I guess we would have been better off, if we had done it.
1830 Q. You know, don't you, that that is a good way to make white flour, and you know that whiteness is a great thing to sell flour on, don't you?
A. Yes, sir. It has been a great aim of the miller, so long as I can have any recollection, to make a white product.
Q. And that was the reason they put in the corn, wasn't it? A. No, not particularly so.
Q. What was it—to save money?
A. Corn, at that time, I think, was worth about twenty-five or thirty cents a bushel, and wheat was worth about ninety, and the incentive was very great to put in the corn.
Q. Do you think you could save as much money, by putting in corn, as you can by bleaching? You told us you could save a great deal of money by not having so much milling to do, if you bleach it?
A. I should say the profit was very much greater, putting in the corn flour, than the bleaching.
Q. You think it is better to make flour white by nitric acid, than it is by corn?

Mr. Scarritt: We object to that because there is no testimony to support it.

The Court: He may answer.

A. Just repeat the question.

Last question read by the reporter.

A. I would say yes, sir.

Witness Excused.

Justin R. Soden, called as a witness on behalf of claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

1831 By Mr. Elliott:

Q. Give us your name. A. Justin R. Soden.

By the Court:

Q. Where do you live? A. Emporia, Kansas.

By Mr. Elliott:

Q. What is your business? A. Merchant miller.

Q. How long have you been engaged in that business?

[—]. Ever since I was old enough to get into a mill.

Q. How long ago has that been?

A. About twenty-four years.

Q. What is the capacity of your mill?

A. We grind from one hundred and fifty-five to two hundred and twenty-five barrels.

Q. Per day? A. Per day. Twenty-four hours.

Q. Do you use the Alsop bleacher? A. Yes, sir.

Q. How long have you been using it?

A. Ever since the fall of 1905.

Q. Have you observed flour that has been bleached by the Alsop process? A. Yes, sir.

Q. Familiar with it? A. Yes, sir.

Q. I will ask you what changes, if any, you have noted, as being produced in flour that has been treated by this Alsop process?

A. I have never detected any particular change in quality, any further than color.

Q. Now, then, I will ask you to compare flour that has been stored or aged naturally, with flour that has been treated by this process. Now, I will ask you to tell us how, in your judgment, the effects produced in the flour by those two different ways of treating it, compare?

A. Well, if a person should attempt to mill, and age his flour, to a point that they like to have it, it would take a good deal of capital, and a good deal of storage room.

Mr. Butler: I move to strike out the "capital" part of it.

Mr. Elliott: Strike it all out.

The Court: Very well. Stricken out.

By Mr. Elliott:

Q. I am asking you to compare the effects on flour, of natural aging it, and the effect of flour by treating it by this process, and to state how those flours compare with one
1881 another?

A. With an Alsop process you can bleach your flour to have a similar age to most any age, you may age your flour too.

Q. Now, as to the quality and strength of flour bleached according to this Alsop process, how will it compare with flours that are naturally aged?

A. I have never detected that bleaching the flour has any effect, whatever, on the quality, outside of the color.

Q. I understand that, but I mean, when you go to make that into bread, and so forth, how will the baking qualities, and so forth, and the elasticity, or these other things that you refer to in bread,— how will they compare from a bleached flour, as compared with a flour that has been naturally aged?

A. There should be no difference.

Q. I will ask you, in your judgment, is there any difference?

A. No.

Q. Have you ever noticed any odor—that is, any foreign odor, or unpleasant odor from the flour that has been bleached by this Alsop process? A. No, sir.

Q. Have you compared bread made from bleached and unbleached flours? A. Only in the high patents.

Q. But, bleached and unbleached?

A. Bleached and unbleached.

Q. Have you noticed any difference in the taste, and smell of bread made from bleached and unbleached flours, respectively? A. No, sir.

Mr. Elliott: That is all.

Mr. Butler: No questions.

Witness excused.

Gerald Billings, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

1833 Direct Examination

By Mr. Elliott:

Q. What is your name? A. Gerald Billings.

Q. Where do you reside? A. Chesterton, Indiana?

Q. What is your business?

A. I am in the bakery business.

The Court: Where is Chesterton, Indiana?

A. It is about forty miles from Chicago, on the Lake Shore.

By Mr. Elliott:

Q. I will ask you if you have had any training as an expert baker, and if so, state what.

A. I have. I attended the Chidlow Institute in Chicago.

Q. How long? A. In 1902, about nine months.

Q. And you took lessons there, in baking?

A. In baking, yes, sir.

Q. Now, I will ask you if you have made a loaf of bread from this flour in Exhibit 249? A. I have.

Mr. Butler: That is the Wells-Abbott-Neeman flour that the gentleman from Iowa brought?

Mr. Elliott: Mr. Shoecraft.

The Court: From Clinton, Iowa?

Mr. Elliott: Yes, the flour that was over a year old.

Q. I will hand you a loaf of bread, and ask you if that is the loaf of bread made from such flour? A. Yes, sir.

Exhibit referred to was then marked by the reporter as Claimants' Exhibit 256.

Q. Do you identify this, as Exhibit 256, Claimants' Exhibit? A. Yes, sir.

Q. You might tell us how you made this loaf?

A. I used 350 grams of flour, 210 c.c. of water, 10 grams of sugar, 3 grams of yeast, 5 grams of salt, fermented the dough for three hours, giving it equal 50 per cent cuts, cutting it over four times.

Q. Just what do you mean by that?

A. 50 per cent of the total time. I allowed it to raise for 90 minutes, and I knocked the gas out of that—cut it over, we call it.

1834 Q. How do you do that?

A. By taking it out of the pan, or the jar, that is is raising in, and putting it on a breadboard, and knocking the gas out of it.

Q. And working it, or kneading it?

A. Working it, kneading it. Then, I allowed it to raise for 45 minutes longer, which is 50 per cent of the total remaining time, and then 22 minutes, and then 12 minutes, and then, in ten minutes, I panned the loaf, and left it to raise in the pan for one hour, put it in the oven, and baked it 30 minutes,—in and electrical oven.

Q. Will you cut that open? A. Yes, sir. (does so.)

Mr. Elliott: I offer this in evidence.

Cross-Examination

By Mr. Butler:

Q. What makes the loaf of bread which you made so yellow, compared with the loaf of bread that the lady from Castle made out of the seasoned flour, for Judge Scarritt?

A. Evidently the process used in baking the bread. The process is a very short process.

Q. The process of making the bread? A. Yes.

Q. Yours is the yellow process?

A. My process is a short dough process, which does not give as light a bread as the long dough process.

Q. I was inattentive, when you were first called, and did not get your employment. What is your business?

A. I am a baker.

Q. By whom employed?

A. I am associated with S. C. Billings.

Q. Where?

A. Valpraiso, Indiana. I live at Hesterton, Indiana.

Q. And you came all the way from Valpraiso, Indiana, to make this loaf of bread?

A. No, sir; I came from Hesterton. I made this loaf, yes.

Witness excused.

1835 F. S. Larabee, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination.

By Mr. Elliott:

Q. What is you name? A. F. S. Larabee.

Q. What is your first name? A. Frank.

Q. Frank S. Larabee? Are you a brother of Mr. Fred Larabee, who testified previously? A. I am.

Q. And are you associated with him in business at Hutchinson? A. I am, yes, sir, in the milling business.

Q. The same mills that he has testified to?

A. Same mills exactly, yes, sir.

Q. I will ask you, Mr. Larabee, what kind of wheat do you grind?

Mr. Butler: In order to save time, we do not expect to contradict the testimony of Mr. Fred B. Larabee, as to the kind of wheat ground in the Larabee mills.

By Mr. Elliott:

Q. Now, what kind of wheat, I will ask you, is found in the markets of Kansas, for grinding, by the millers?

A. The best wheat we can obtain is No. 2 hard Kansas wheat.

Q. What is the weight of that, per bushel?
A. 59 pounds per bushel.
Q. I will ask you if you are familiar with the milling of flour, as well as with the manufacture of flour?
A. I have attempted to make myself familiar with it. I have made several trade trips for our concern into the flour markets of the United States, and among the smaller trade.
Q. Now, in buying or selling flour—particularly, I presume, buying it—I will ask you to what is color a test, or is color relied on as a test of the character of the flour?
1836 A. Color is not regarded by the buyer as the test of the quality of the flour.

Mr. Butler: I move to strike that out.

The Court: It may stand.

A. May I answer that?

By Mr. Elliott:
Q. Yes.
A. I have never seen, in my experience in selling flour—I have never seen a buyer who has been deceived by the—

Mr. Butler: I move to strike out the volunteer statement of the witness as not responsive, irrelevant and immaterial.

The Court: It is not for him to say who has been deceived and who has not.

By Mr. Elliott:
Q. Now, you must testify just from your own experience. Do not tell us anything about what anybody else has said. In your experience, have you ever known flour to be bought solely on its color? A. No, sir, I have not.
Q. Now, take a flour of any given color, and assuming the color to be satisfactory, I will ask you in commercial life what is the usual custom of dealing with that flour, to ascertain if it is satisfactory or not?
A. Well, it depends, Mr. Elliott, upon whether the buyer is a skilled buyer, or an unskilled buyer.
Q. Treat both.
A. The skilled buyer will put the flour to other tests. Take the baker, who is presumed to be—who is a skilled buyer, will test for the strength of the gluten, moisture absorption, loaf volume, and the unskilled buyer, such as the country merchant, would buy flour only upon the guarantee of the mill.

Mr. Butler: I move to strike out the last statement, as being a conclusion of the witness, and as absurd.

The Court: It may be stricken out.

Mr. Scarritt: I ask that the remark of the gentleman, as to its being absurd, be stricken out.

Mr. Butler: All right, let the "absurd" go out.

1837 By Mr. Elliott:

Q. Now, dealing again with your own experience, what is the custom of these unskilled buyers, as you say, in buying flour; what is the custom that obtains in the trade?

A. That is the custom, Mr. Elliott, as I expressed it.

Mr. Butler: I move to strike that out.

The Court: It is stricken out.

Mr. Elliott: We except.

Q. Mr. Larabee, I will ask you, if a certain flour was presented to you and you had no flour to compare it with, you just had the one flour,—could you tell whether it was a straight flour or a patent flour?

A. Not from its appearance.

Q. I will ask you if, in your dealings with the milling of flour, and the bleaching of it, what effect bleaching has as to the relative flour of different grades of flour, as before bleaching and after bleaching.

A. Mr. Elliott, that would depend. If it is upon the flours milled in the same mill?

Q. Yes, sir.

A. The bleaching does not bring the lower grades to the same appearance as the higher grades, and, if both are bleached with the same amount of bleaching, they have the same relative difference after, as before.

Q. In your judgment, could you bleach a straight grade of flour, and make it resemble, or give it the color of a patent grade of flour, unbleached?

A. Not with Kansas wheats. Kansas milling, it cannot be done.

Q. That is, with what you have knowledge of?

A. Yes, sir.

Q. Could you, in your judgment, bleach a clear flour, and give it the color of a patent grade of flour—high grade of flour? A. I believe that is impossible.

Q. Just let us assume, Mr. Larabee, that a miller, bleaching a clear—that it was possible for a miller to bleach a clear flour and give it the same color, or a whiter color, than
1838 his patent flour, and should mix that clear flour with his patent flour, what effect would that have upon the grade of the patent flour?

A. It would deteriorate it.

Q. Now, respective of bleaching, and before bleaching, I will ask you if it is within your knowledge that any millers are accustomed to establish certain grades of flour, and sell them under certain brand, and to maintain the grades of such flours?

A. You mean by common consent among the millers?

Q. No. I say, is that the custom among millers? Take your own mill. Is it your custom to prepare a certain grade of flour, and sell it under certain brand, and maintain the grade of that flour sold under that brand? A. Yes, sir.

Q. And I say, within your knowledge, is that the custom that obtains amongst millers, do you know? A. Yes, sir.

Q. Have you ever noticed any foreign or unpleasant odor in flour that has been bleached by the Alsop process?

A. No, sir.

Q. Have you examined breads made from the same flour, bleached and unbleached? A. A great many times, yes, sir.

Q. Have you ever noticed any difference in the taste, or the smell of such loaves of bread? A. None whatever.

Q. Now, I want to ask you as to the effects which, in your judgment, are produced on flour, as a result of bleaching it by this Alsop process. Tell me your opinion in that regard.

A. It improves it—gives it a whiter color—removes the yellow stain, which is naturally in our flour, and ages it, after the manner of the natural aging.

Q. Are you a married man? A. I am, yes, sir.

Q. Do you use bleached flour in your own family?

A. I do.

Q. I will ask you, Mr. Larabee, if flour from new wheat is a good flour for baking purposes, irrespective of bleaching?

A. My understanding is a flour made from new wheat in baking will run in the dough, and it is not acceptable to the baker.

1839 Mr. Butler: I move to strike that out.

The Court: I did not hear that answer.

A. My understanding is that flour made from new wheat will run in the dough.

Mr. Butler: That is not all you said.

A. And is not acceptable to the baker.

The Court: The last part of it is stricken out.

By Mr. Elliott:

Q. Would, in your judgment, such flour be good for baking?

A. Oh, yes, it would be good for baking.

Q. I am afraid you do not understand my question.

Mr. Butler: Well, I am afraid he did, Mr. Elliott.

By Mr. Elliott:

Q. Well, is flour, if it runs in the dough, a good flour for baking? A. Yes, sir.

Mr. Butler: He says it is, and you cannot change that.

Mr. Elliott: No, I do not want to change it.

Q. What difference does bleaching flour from new wheat make on that? A. Seasons it; ages it.

Q. I mean, what effect does bleaching flour from new wheat have on it, as compared with a flour made from new wheat, unbleached; how will they compare, in bread making qualities?

A. It improves. The bleaching improves the flour made from—well, it does not increase the loaf volume, or the gluten, or anything of that kind.

Q. But its baking qualities, I meant.

A. Yes, it bakes better.

Q. Will a flour made from a new wheat, that has been bleached by this Alsop process, in your judgment make a better loaf of bread than the same new flour unbleached?

A. No, sir, except the color.

1840 Q. Except in color? A. Yes, sir.

Q. Now, do you regard color as a defect in flour?

A. Yes, color is—bad color is a defect in flour.

Q. I did not make my question clear. Do you regard yellow color I should have said, or a dark yellow color, as a defect in flour? A. I do, certainly do.

Q. Now, then, take a flour having a dark yellow color, and assuming that that color is removed by bleaching, I will ask you, in your judgment, if that would be removing an inferiority in the flour?

A. Yes, sir, it would be removing a defect.

Q. What per cent of Turkey red wheat would you say is obtainable in the markets of your state, or district, or wherever you buy it?

Mr. Butler: I object to that as immaterial.

The Court: He may answer it.

A. Not exceeding one per cent.

Mr. Scarritt: You mean the whole state of Kansas?

A. The whole state of Kansas.

Cross-Examination

By Mr. Butler:

Q. You are not actively engaged in the milling business?

A. Pretty actively.

Q. Your time is principally spent in the banking business?
A. Partially.
Q. Principally?
A. Principally; the majority of it, yes, sir.
Q. That is the way I understood you. A. Yes, sir.
Q. Is sulphur used to bleach wheat?
A. Let me understand it?
Q. Is sulphur, or the fumes of sulphur, used to bleach wheat? A. Not to my knowledge. No, I never heard of it.
Q. Is lime used to bleach wheat? A. No, sir.
Q. Any of the products or compounds of lime used to clean or treat or bleach wheat?
A. If you will modify that question, I think that lime is used sometimes to remove smoot from wheat, but not to bleach it.
1841 Q. What effect have the fumes of lime upon wheat?
A. I could not tell you. We never used it in our mill.
Q. Never used lime in your mill? A. No, sir.
Q. To remove smoot?
A. No, sir; we do not buy smooty wheat, to start with.
Q. Any smooty wheat in Kansas A. Not in our section.
Q. Is it not within your knowledge that certain grainmen, especially in the districts east of you, use sulphur fumes to bleach wheat? A. No, sir. I never heard of that before.
Q. Never heard of that? A. No, sir.
Q. Did it ever come to your knowledge that they put corn in, or the products of corn?
A. Only by hearsay.
Q. Yes. You never did it?
A. No. Well, I have heard that people did that, but we never did it.
Q. Well, it is a matter of great notoriety, in certain districts of this country, isn't it, with everybody in the flour and milling business, that it is used to deceive the consumers?
A. I could not tell you.
Q. Don't you know that, before the Alsop process—
A. (Interrupting) Well, Mr. Butler, you asked me as a matter of great notoriety. I could not tell you—
Q. It is a matter of common knowledge in the trade, isn't it? A. Yes.
Q. In the flour trade?
A. Yes. I have known of such things being done.
Q. Where your wheat flour had to go to find a market, it met wheat flour with the products of corn there, and had to compete with it, didn't it, just as Friend did, who was on the stand?
A. If we have suffered from such competition, I never knew it.

Q. Well, you are in the banking business, principally?
A. Yes; understand, I am in the milling business. I try to understand that.
1842 Q. Now, I want you to say whether or not the matter of putting corn in, and concealing the fact that corn is in the flour, is known to you, by general repute?
A. Yes, sir.
Q. To have been practiced extensively before the Alsop bleaching commenced?
A. I would not say extensively; I know it has been practiced.
Q. Now, that makes a fine flour, doesn't it? Doesn't corn added to wheat flour, really improve it, if it is in the right proportions?

Mr. Scarritt: I object to that, your Honor.

The Court: He may answer.

A. I would not say it would make fine flour.
Q. Well, it would not hurt it any? It would not injure or help it, either? A. I do not know; I suppose not.
Q. Now, if a little corn in the wheat flour whitened it, and got rid of this yellow color—just assume that to be the truth, now,—would you think that would be better than nitric acid?

Mr. Scarritt: A little corn juice might not hurt it?

A. Well, basing it upon the assumption, I presume yes.

By Mr. Butler:
Q. You would rather have you flour whitened by the honest products of corn, than by nitric acid, wouldn't you?
A. But, Mr. Butler, I don't like to have the inference drawn that I agree with you that that will remove the yellow tint from flour.
Q. No; you think nitric acid would remove it quicker, don't you?
A. Yes. I think that the bleaching process we use would remove it quicker.
Q. And you are not ready to say whether that is nitric acid or not? A. No, sir; I am not a chemist.
Q. Now, Mr. Elliott asked you a question, and the effect of that question, and your answer, was this, that millers establish—each mill, we will say, establishes a grade, and maintains it?
1843 A. Of its own. A grade of its own?
Q. Yes. Is that right?
A. I so understand it, yes, sir.
Q. Do you know where Wellington, Kansas, is?
A. Yes, sir.

Q. Do you know the Aetna Mill & Elevator Company, there? Cramer used to run it, and sold it.

A. I have never been in Wellington, Mr. Butler.

Q. Did you know the patent flour that that mill put out—"Aetna Silk, High Patent"?

A. I probably have examined it, sometime, as I do numerous—what our competitors are doing, but I do not have recollection of it now.

Q. Were you aware that that was a "Stuffed straight".

A. No.

Q. You know [that] I mean by a stuffed straight?

A. I think I do, yes, sir.

Q. That is, you take a straight flour, and then buy the low grades from some other mill, and put it in?

A. Yes, sir.

Q. Now, do you think that the stuffing of a straight with low grades, and the bleaching of it by the Alsop process, and labeling of it "a high patent", is a maintenance of a mill's grade?

Mr. Scarritt: We object to that, if your Honor please, as incompetent, irrelevant and immaterial, has nothing to do with the issues in this case, not based on any evidence showing that this flour in question was of that kind of a grade?

The Court: He may answer.

A. Mr. Butler, you put so many things in one question.

By Mr. Butler:

Q. Well, I will have the reporter read it.

A. No, I don't mind about that, but you were speaking of labeling it a patent. Now, I would not like to testify as to that, because most all grades of flour have been labeled "patent".

Q. Well, now, to cross-examine you, you said your mill maintained its own grade. Now, then, I ask you to assume that the "Aetna Silk High Patent" made by the Aetna Mill & Elevator Company in your state, was, in fact, a flour made from a mixture of new wheat, and old wheat, to which was added 15 or 20 per cent clear, bought from Hunter's

1844 Mill—the mill where the witness Barnard worked—and when they were made that way, they were bleached by the Alsop process, and labeled, "Aetna Silk, High Patent". I ask you whether or not you think that that is the maintenance of a grade.

Mr. Scarritt: We object to that.

The Court: I overrule the objection.

Mr. Scarritt: Let me state the reasons.

The Court: Judge, you have just gone over them, but you may repeat them if you want to.

Mr. Scarritt: Well, I object to that as irrelevant, incompetent and immaterial, and because counsel, in his question is attempting to testify to what other witnesses in the case have testified, and testifying wrongly.

The Court: Objection overruled.

Mr. Scarritt: We save an exception.

A. With this modification, Mr. Butler, that, if they had always put that grade of flour in that brand, I should say they were maintaining the brand—their grade.

By Mr. Butler:

Q. Now, as an expert miller, is a straight flour, to which has been added a 15 per cent clear, a patent flour?

A. Well, Mr. Butler—

Q. (Interrupting) Wait a moment, now. If 15 per cent clear flour bought from another mill, the remnant of the flour content of the wheat, used in the other mill to make a patent flour. A. I understand that.

Mr. Scarritt: I object to that, your Honor, because he has not said that there is such a thing as a patent flour.

The Court: Objection overruled.

Mr. Scarritt: We save an exception.

A. I could not tell you what a patent flour is, Mr. Butler.

Mr. Butler: I move to strike out that answer.

The Court: That is stricken out.

1845 (Last question read.)

A. I do not know what a patent flour is.

Mr. Butler: I move to strike the answer out as not responsive.

The Court: Yes, that is not responsive.

Mr. Scarritt: I object to that, if your Honor please. The witness has got a right to say that he don't know what an element of the question is.

Mr. Butler: Well, now, they like to argue these matters, but I do not.

Mr. Scarritt: I do not like to argue it; I want to make an objection.

Mr. Butler: This gentleman was talking about patent in his direct examination, where he could tell one from the other, and he knew then, and I do not think he has forgotten so soon.

The Court: This witness, in his testimony in chief, I understood, was testifying about patent flour. Now, if he wants [if he wants] to withdraw that, or says he doesn't know what patent flour is, I suppose that will end it.

Mr. Scarritt: I think your Honor is wrong in stating his testimony.

The Court: I understood him, in response to Mr. Elliott, that he was talking about patent flour. The witness will please answer the question. Did you say anything about patent flour in your testimony in chief?

A. Mr.—Judge, if the Court please, if it was, I didn't mean it in the sense that Mr. Butler means it.

The Court: Well, in what sense did you mean it?

A. Flours—I have seen flours labeled "patent". Now, under the evidence that has been—some millers have testified here, a smaller percentage, they called a patent—in that snse—

The Court: You don't know anything about what a patent is?

A. No, sir.

1846 The Court: That is all. Call another witness. This witness don't know anything about it.

Witness excused.

Alvah W. Esterbrook, called as a witness on behalf of the claimant, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. Mr. Esterbrook, state your name.

A. Alvah W. Esterbrook.

Q. What is your occupation? A. I am a chemist.

Q. Have you specialized along any particular line?

A. In flour, wheat, grain.

Q. Where do you live? A. Kansas City, Missouri.

Q. What business are you engaged in?

A. Engaged in the testing of flours.

Q. Have you a laboratory? A. Yes.

Q. Do you have facilities for baking bread in your laboratory? A. Yes, sir, we do.

Q. What kind of an apparatus have you for that purpose?

A. We have—well, a modified Koellner system—based on the Koellner system.

Q. You mean that is for preparing the dough?

A. Yes, sir.

Q. Now, what kind of an apparatus have you for baking the bread? A. We use an electric oven.

Q. I will ask you if you received from Mr. Friend two flours, to be made by you into bread?

A. What was the name, please?

1847 Q. Mr. Friend, who testified here. A. Yes.

Q. Were you here when he testified? A. No.

Q. I hand you Exhibits 254 and 255, and ask you if you can identify them as being the loaves of bread that you made from the flour delivered to you by Mr. Friend?

A. Yes, sir, I can.

Q. Tell us how you identify them.

A. They are marked by me "Hannibal Milling Company, bleached" and "Hannibal Milling Company, unbleached".

Q. Now, I want you to tell me how you made those two loaves of bread, giving me the ingredients you placed in each, and the baking and all of that. Give us the details, in other words, of making those two loaves of bread.

A. I used 340 grams of flour in each loaf. Each loaf is exactly the same, a duplicate of the other, as far as quantities and weights and measures and temperatures are concerned. I used 340 grams of flour, 12 grams of sugar, 5 of salt and 10 of yeast, 187 c.cs. of water in each loaf, and the ingredients were placed in the mechanical mixer, Koellner style, and kneaded exactly 20 minutes, and then the dough was divided on the balance, and made into two loaves, and placed in a pan, and allowed to raise to a gauge placed over the pan, and when it had reached that gauge, the loaves were placed in an electric oven, and the temperature kept at exactly 300, and both baked for exactly 30 minutes. Then, the dough was weighed before it went into the oven, and the loaves were weighed as they came out of the oven, and I got the loss in baking, and, by use of a displacement seed box, we got the volume of the loaves.

Q. Now, I will ask you whether there was any difference made by you in the baking of these two loaves. Were they both baked, so far as you know, under exactly the same conditions?

A. Both of them were baked under exactly the same conditions.

Q. Prepared in exactly the same way?

A. Exactly the same way.

Q. Now, I believe you made a baking for Mr. Gootch,

1848 did you not? A. Yes, sir, I did.

Q. I hand you Exhibits 243 and 244, and ask you to state if the flour from which those loaves were made was

hand you by Mr. Gootch, and if you can identify those loaves as being made from that flour?

A. They were not handed me by Mr. Gootch, but by a representative of the Gootch Milling Company.

Q. Who was that? A. Mr. Roth.

Q. Mr. Roth was the witness here? That is correct. Now, are you able to identify those loaves as being made from that flour handed you by Mr. Roth? A. Yes, sir, I can.

Q. By what manner?

A. I see my marks on them,—"Gootch No. 1" and "Gootch No. 2", placed there by me.

Q. Now, will you please tell us how you prepared those loaves, what ingredients you used, and the details, as in the other case? A. These two loaves—

Q. (Interrupting) Wait. Was one of these flours bleached, and the other unbleached? A. I was told so.

Q. All right.

Mr. Butler: Of course that would be hearsay.

The Court: Did you test them to see whether they were bleached or not?

A. No, sir.

The Court: This other witness was to be supplemented by this one. The other witness covered that.

A. The two loaves were made with the same apparatus, and under the same conditions as the other two I have described, using the 340 grams of flour, 12 grams of sugar, five of salt, 12 of yeast, and in this case, 192-2.3 ccs. of water.

Q. Does that mean that this flour required a little more water, or a little less?

A. That flour needed more water than the other, to make the right kind of dough.

The Court: Which did?

A. Gootch No. 1 and 2, required more water than the other.

1849 Mr. Scarritt: What was that?

A. Water.

Mr. Scarritt: What was the amount of the yeast?

A. 10 grams.

Mr. Scarritt: You said 12 grams.

A. It was 12 of sugar, and 10 of yeast.

By Mr. Elliott:

Q. Now, just so there will not be any mistake, give us those ingredients you used, over.

A. 340 grams of flour, 12 grams of sugar, 5 of salt, 10 of yeast, and 192-2.3 c. cs. of water.

Q. Was there any difference in the manner of preparing, and in the manner of baking these loaves, as between the two flours? A. None whatever.

Q. They were both made and baked under the same conditions? A. The same.

Q. I will ask you if, in your experience as a baker, will different flours have different absorptive qualities for water? Now, the flour used for making Exhibits 254 and 255 was a different flour from that used in making Exhibits 243 and 244?

A. Yes, sir, entirely different.

Cross Examination

By Mr. Butler:

Q. Mr. Esterbrook, in either of these bakings that you have referred to in your direct examination, did you raise the bread as high as you could? A. No, sir.

Q. The raising takes place during fermentation, is that what it is called? A. Yes.

Q. So, in all of these cases you stopped the fermentation before it reached the maximum? A. Yes, sir, in all cases.

Q. That is so that you could not see which was the best, which was the toughest and strongest, wasn't it? It had that effect? I don't mean any improper purpose.

1850 A. That was so we could see which was the best.

Q. So you think if you had left them go on and raise to the full capacity, to see which one broke down first and let the gas escape, that would not be a good way to find out which dough was the toughest. A. No, sir.

Q. You think a good way to find out which dough is the toughest is just as soon as it got a little gas in there at all, is to stop the fermentation, and bake them, do you?

A. No, sir.

Q. Well, you did not let them rise very much? Here is a woman down here at Castle, who used some of the bleached flour. See that loaf of bread? A. Yes.

Q. That don't look much like yours, does it?

A. Not much.

Q. Not much, no. I asked somebody who was on the stand here this morning why it was that one bleached flour was very yellow and the other was very light. I do not know which one it was. It was that old fellow. It was Mr. Billings, came in here, and he told me about baking flour that was brought down by Shoecraft, from Clinton, I think, that was made by Wells,

Abbott, Neeman Company, that he used the "Yellow" method, and, therefore, his bleached flour bread was not near as white as the bleached flour bread that Mrs. Kitwell made, from Castle. It means this, doesn't it, that a baker can make about the kind of bread he is after, doesn't it, if he knows how?

A. Yes, he can.

Mr. Butler: That is all.

Redirect Examination

By Mr. Elliott:

Q. Mr. Esterbrook, what method of baking did you employ?

A. Koellner.

Q. From your knowledge of baking, do you understand that this is a different method of baking? A. Yes, sir.

Q. Made by a housewife? A. Yes, sir.

Q. What would that be termed?

A. Domestic method.

1851 Q. I will ask you if the method of baking you employ is known by you to be adapted to testing the baking qualities of flours? A. It is.

Q. Is that the test that you regularly employ—the kind of baking? A. Yes, sir.

Q. You made no difference in the manner of your testing or baking, in this, from what you use in any other flours, would you? A. No, sir, no difference at all.

Recross Examination

By Mr. Butler:

Q. Don't the millers, when they are testing the quality of their gluten, in the mill, make a loaf, one of which would be about as big as eight of these little things you have brought in?

A. I don't know of any such method.

Q. Don't they use, great, big loaves, and distend them enormously, so that they are not comparable at all with the ordinary bread that we find on the tables?

A. I have never seen that method used in a mill.

Q. Well, have you ever seen it used anywhere for testing?

A. No.

Q. Is this the mill method? A. Yes, sir.

Q. That you have used? A. Yes, sir.

Q. And that is the method for testing the strength of gluten, to see how far it will go?

A. No, not necessarily that.

The Court: I cannot hear you.

A. No, sir.

By Mr. Butler:

Q. No, of course it isn't. Well, now, isn't it a fact that, at the mills where they have laboratories for baking, they often, at least—I do not say usually,—but sometimes for the purpose of ascertaining, make a loaf, the cross section of which would be larger than that (indicating) the big piece of paper that I have here?

1852 A. I never saw any such method.

Q. You never worked in any such place, did you?

A. I never tested like that.

Q. You never worked in any such place, did you, in a mill?

A. No, sir.

Q. Now, when you are testing the strength of something that breaks—gluten breaks if over expanded, doesn't it?

A. Yes.

Q. Well, now, it is like rubber, isn't it? Comparable to rubber, and is called resiliency?

A. A little bit, yes, sir.

Q. So, when you are comparing the dough of the one and the dough of the other, it is like comparing the strength of two rubber bands, isn't it? A. Yes.

The Court: What?

A. Yes, somewhat.

Q. Now, if you subject them to the same pressure, and they come out the same length, that doesn't tell which will break first, does it?

A. Well—I see your illustration, but I don't consider it to be of any value whatever.

Q. I do not care what you consider; when I want to know what you consider, I will ask you.

Mr. Butler: I move to strike that out.

The Court: Yes.

By Mr. Butler:

Q. Now, I say, unless you expand them until one broke, you cannot find out which will hold the most, can you?

A. What are you talking about?

Q. Your dough, if you want to, or your rubber, or anything that you are comparing, to see which is stronger, you have to put a breaking test on, don't you?

A. If you will tell me what you are talking about, I will answer.

Q. If you do not know, I will not ask you any more questions.

A. You are talking about a rubber and then dough. If
1853 you will tell me which you are talking about, I will answer, but not until.

Q. You do not understand me?
A. If you do not talk plain English, I cannot understand you.
Q. We will get an interpreter for you, next time.

Mr. Butler: That is all.

(Court thereupon adjourned to meet at two o'clock p. m., Friday, June 24, 1910.)

Pursuant to adjournment court met at two o'clock p. m., and proceeded with the trial of said cause further as follows:

Henry Stark, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:
Q. What is your name? A. Henry Stark.
Q. Where do you reside? A. Clinton, Missouri.
Q. What is your business? A. I am a miller.
Q. Are you a practical miller? A. Yes, sir.
Q. How long have you been engaged in the milling business? A. Since '73—about thirty-two years.
Q. What is the name of your mill?
A. The White Swans Mill, of the Bulte Milling Company. The offices reside here in Kansas City.
Q. The White Swans Mill of the Bulte Milling Com-
1854 pany? A. Yes, sir.
Q. And you say their office is here in Kansas City?
A. Yes, sir.
Q. What is the capacity of that mill?
A. We can make about twelve hundred barrels. We have got a double mill. We can double it up so we can run about twelve hundred barrels in twenty-four hours.
Q. Are you familiar with the Alsop process? A. Yes, sir.
Q. Have you an Alsop machine in your mill there?
A. Yes, sir.
Q. How long have you had that Alsop machine in your mill?
A. I think in the neighborhood of five years or a little more.
Q. Now, are you familiar, Mr. Stark, with the flour that has been treated by this Alsop process? A. Yes, sir.
Q. Have you ever examined it to ascertain if there was any foreign or unnatural odor imparted to it by the bleaching process? A. You mean the flour?
Q. Yes. A. No, sir, there ain't.
Q. Have you made examinations of bread made from bleached and unbleached flours? A. Yes, sir.

Q. I will ask you if you have ever noticed any difference in taste or smell in such bread? A. I have not.

Q. What effect, if any, have you observed, bleaching by this Alsop process, to have upon flour?

A. Well, it—by running it through the process, it lightens the color—makes it whiter.

Q. Now, I will ask you, take a flour that has been bleached, as compared with a flour that has been stored and naturally aged. Are there [are] similarities in characteristics in quality, and so forth, between these two flours, and if so, what would you say they are?

A. Well, now, of course that all depends upon conditions. You can store a flour in a warehouse, in packages, or sacks where it gets plenty of air, it will bleach out—get whiter, from the air, and lose some in weight, you know, by drying out.

Q. Now, compare such flour with flour that has been bleached by the Alsop process.

A. Well, now, there is a difference, in the same way.
1855 Flour that you let it bleach, and have it in a cool place, you can get it pretty near as white, or as white as you could do, with artificial bleaching.

Q. If I understand it, the bleaching produces the same color as the natural aging. A. Yes, sir.

Q. When flour is naturally aged, does it improve it in quality—baking qualities and so forth?

A. Well, now, of course, it makes it whiter. The baking qualities, of course, makes it better by changing the mill, some. You can go to work and change your grinding—

Q. (Interrupting) Now, let me put it this way. You take a new flour. A. Yes.

Q. A flour from a new wheat. A. Oh, yes.

Q. Now, take that flour, and store it, and age it for two months or three months. A. Yes.

Q. Will that aged flour possess better properties for baking than the new flour? A. No, it won't.

Q. It won't possess any better properties?

A. No, indeed not.

Q. In your judgment, will the baking qualities of a naturally aged flour be any better than a new or green flour?

A. The aged flour is better.

Q. I want to compare the flour from a new wheat—a new flour with a flour that has been aged and conditioned by storage for two months, or three months, or any number of days.

A. Of course, she dries out, and becomes whiter, and she bakes whiter.

Q. Bakes whiter? A. Yes, sir.

Q. Now, what would you say as to a new flour that has been bleached by this Alsop process,—what effect would that have on such properties?

A. Well, now, we have a mill there that we bleach the patents and the second grade, and we find that the bleaching the flour, also dries it, and it stops this runny substance in the new flour, when you send it to the market. We have had lots of complaints before we used the bleacher.

Q. I will ask you if in your judgment bleaching has
1856 the same effect on flour as natural aging.

Mr. Butler: I think I will object to that as leading.

The Court: It is leading, Mr. Elliott.

Mr. Elliott: I withdraw the question.

Q. I will ask you if you have observed whether or not bleaching flour by this Alsop process has the same effect on flour as naturally aging it, and if so you may state your conclusions. A. It has the same effect, yes, sir.

Q. Now, I would like to ask you, Mr. Stark, to tell us, in your judgment, what aging of flour is, or conditioning. We have had these terms. What in your judgment is the effect produced in flour by aging and conditioning it—storing it, that is, for three or four months? What effect is produced in the flour?

A. When you first put it in, it looks kind of yellow, you know, and when you age it, the longer you store it, it seems like the lighter in color it gets, and it dries out somewhat, and makes it in good condition for bread making. Of course, that all depends, too. You take a barrel of flour that is closed up in wood, and the air don't get to it, that will not bleach in proportion to the flour that is in sacks.

Q. Are all flours improved by aging?

A. Well, I don't know about that. I don't think so.

Q. Now, tell us in what cases there would be flours, if any, that would not be.

A. Well, it is different. Now, you take, for instance, an unsound flour, you grind bad wheat, and you put that back there, the longer you let it lay, the worse it gets, spoils it. It gets musty, you know.

Q. Now, suppose you take a flour from unsound wheat, and bleach it by this Alsop process, how would the result be in that case?

A. Be the same way. Be all in the same condition.

Q. In your judgment is this a correct statement, that flours that can be improved by natural aging can be improved by bleaching, and that flours that cannot be improved by natural aging cannot be improved by bleaching?

Mr. Butler: We object to that as leading and suggestive, and calling for the witness's conclusion.

1857 The Court: That is very leading, Mr. Elliott.

Mr. Elliott: I will withdraw it.

The Court: You have a miller here. He ought to be able to go on and state the facts.

By Mr. Elliott:

Q. Now, how does treatment by this Alsop process compare with naturally aging, where you are dealing on the one hand with flour from sound wheat, and on the other hand with flour from unsound wheat?

A. Sound wheat? Well, that would bleach and bleach white, but the unsound wheat—well, while you may get a color on it, at the same time, it is not sound. If it has inferiority in it, it won't keep, that is all.

Q. Do the conditions of the atmosphere, in the place where you store flour, and the manner of packing the flour—the manner in which it is packed, have anything to do with the extent to which it will age and condition when you store it?

A. Sure.

Q. What is the effect?

A. As I said before, if you have got a warehouse, and get good ventilation through it, of air, and pile your flour so that your air can get through it, it dries it, and bleaches it, the longer you let it stand, you know, and of course, it dries out some, and of course if you put it in a damp—in a place that you don't have any good ventilation, then it will take longer to bleach. That has been my experience.

Q. Now, I will ask you, aside from what you have already testified to, as the effect of bleaching, if you have noted any other advantages which you derive, if any, from the use of the Alsop process.

Mr. Butler: You mean financial, Mr. Elliott?

Mr. Elliott: No, sir, as respects the flour.

A. Well, now, there is one good thing I have found out, in using the bleacher, is this: I recollect when I did not use the bleacher, that I have to use considerably finer cloth.

By the Court:

Q. What?

A. Considerably finer cloth—silks—and ground con-
1858 siderably closer, which, of course, means more power.

By Mr. Elliott:

Q. Now, just let me interrupt you there. Why would you grind finer?

Mr. Butler: Wait a moment. This is all the economic side of it, is it not?

The Court: Undoubtedly.

Mr. Scarritt: No. Wait until we get through.

The Court: I will wait until you get through.

Mr. Scarritt: We are going to get to the quality, in a minute.

The Court: All right.

A. By grinding very hard, you can grind color onto flour.

By the Court:
Q. Sir?
A. You can grind color onto flour, by grinding closer, by jamming the rolls all up, which of course, is not very practicable, because it takes lots more power, and more oil.

By the Court:
Q. Oil for what?
A. Oil for the journals, to keep cool, you know, and, besides, you make a soft flour. We find that our trade demands a white flour, and a granular—

Mr. Butler: (Interrupting): Wait a moment. In view of the form of the question, I fear that a speech was planned on, and I move to strike out what he found about his trade, as immaterial.

The Court: It is very hard to distinguish. I will let it stand, and, at the close of the case, I intend to charge the jury with reference to this question of economy of production, and so forth.

By Mr. Elliott:
Q. Tell me what effect, Mr. Stark, grinding flour finer, as you have stated, has on its color.
A. Well, it makes—grinding it finer, we also fine up on the cloth, you know.

1859 By the Court:
Q. On what? A. Your silks.

By the Court:
Q. What? A. Silks.

By the Court:
Q. Silks?
A. The white bolting cloth. The bolting cloth, and the silks. There is no mill can do without bolting cloth, and silks.

Q. Now, what effect on the quality of flour does the grinding the flour close have?

A. Now, here is the point. It is not as salable, as if you get the granularity in it. Now, if we want to use the other—say, for instance, you stop the bleacher right the way it is,—just stop it—your flour is going to be kind of yellow. You have got to go to work, and, in order to get some color on it, and get it white, you have got to fine up on your cloths, and jam up on your rolls, and of course, that means more power, and more oil, and, not only that, but, when you do that, you can make at least—I know the way I am using it now, I can make more than one hundred barrels more, in twenty-four hours, than I ever could then, because it bolts freer, by using coarser cloth, and by grinding granular, makes the flour granular.

By Mr. Scarritt:

Q. Does that make it better, is what we want to get at.

A. Makes it better, yes, sir.

By Mr. Elliott:

Q. Now, I will ask you if you have got some samples of flour that you can illustrate this with.

A. The grinding of color?

Q. Yes. A. I have.

Q. Will you produce it? A. (Witness does as requested.) Now, here is the three samples. Here is the granular flour, after bleaching.

Q. Well, we will have this marked.

1860 By Mr. Scarritt:

Q. What do you mean by granular flour?

A. Sharp, you know, granular—not ground down fine, but just granular.

By Mr. Scarritt:

Q. You can feel the granular substances in it?

A. Yes, with your fingers. You know the miller does most of his business, with feeling, you know.

By Mr. Scarritt:

Q. Testing that way? A. Yes, sir.

By Mr. Elliott:

Q. Now, I hand you Claimant's Exhibit 257, and ask you to state what that is.

A. That is the granular flour, after bleaching.

Q. I hand you Claimants' Exhibit 258 and ask you to state what that is.

A. Granular flour, before grinding, or bleaching.

By Mr. Scarritt:

Q. Before grinding?

A. Before grinding or bleaching. This is the product, now, that we bleached.

By Mr. Elliott:

Q. I hand you Exhibit 259, and ask you to state what that is.

A. That is the granular flour after grinding. You grind the color on it, you know.

Q. Now, will you put these out on a board, so we can tell which is which? A. (Witness does as requested.)

Mr. Elliott: We offer these in evidence.

By Mr. Butler:

Q. How much yellow berry was in the wheat that made this flour?

Mr. Elliott: What is this for?

Mr. Butler: Aren't you going to offer these?

Mr. Elliott: Yes.

The Court: Suspend the offer until he has cross-examined.

Mr. Butler: I want to object to the introduction of this, because it does not show that it is comparable at all with the flour in question.

The Court: Are you through with your examination in Chief?

1861 Mr. Elliott: No.

The Court: Then it may be identified now, but not be offered in evidence until later on, until Mr. Butler cross-examines him.

By Mr. Elliott:

Q. Now, I will ask you to state what this flour is, at the left of this board, at the point marked "One".

A. That flour is the same as in the middle, here, only it is ground, to get the color, you know.

Q. That is, then, a finer flour?

A. Yes. It is ground. That makes it finer. Every time you grind it, it gets finer.

By Mr. Scarritt:

Q. You can grind it, and get the color in, or get it out?

A. Get your color in by grinding it. You get your color in, you know, by grinding it close.

By Mr. Scarritt:

Q. You mean the white color in?

A. Yes, makes it whiter, or lighter.

By Mr. Scarritt:

Q. When you say color, you mean white?

A. Certainly. It makes that whiter.

By Mr. Elliott:

Q. Now, the flour at the right, at the point marked "Two" what is that?

A. That is the same coarse, granular flour, in the middle, only it ran through the bleacher, you know.

Q. That is a granular flour, bleached? A. Yes.

Q. Now, the flour in the center is what?

A. That is the granular flour, that we had, that we took out just like that, to show how it can be bleached white, and how it can be ground white, you know.

Mr. Helm: You are offering all of these exhibits you have identified, Mr. Elliott?

1862 Mr. Elliott: I am going to offer them later, when Mr. Butler gets through. Well, I offer all of these as exhibits.

The Court: The ruling is suspended until the cross-examination of the witness is concluded.

By Mr. Elliott:

Q. Now, as respects the different grades of flour, I will ask you what effect bleaching has upon the color of these grades, as respects their relative color, before bleaching and after bleaching. A. What flour is that?

Q. Any flour. Any grades of flour you may name.

A. I would like to have you say that again.

Q. Take your grades of flour. Now, what effect, if any, does bleaching have on the color of those grades, as respects their relative color before bleaching and after bleaching?

A. Well, it makes them whiter, of course, and the relative color will be just the same.

Q. Between the different grades?

A. Different grades, you know.

Q. Now, to what extent does bleaching change the color of flour? A. That is to what extent it changes it?

Q. Yes.

A. That all depends upon how much bleaching you use.

Q. Now, let me give you an illustration. Suppose you take your high grade flour, and bleach it, and then compare with flour after being bleached, with say chalk, or starch, or some very white substance, how would the color of them compare?

A. It will not make it near as white as that. It would just make it lighter colored. It makes it some whiter. You do not get it as white as chalk, or anything of that kind. It would make it look yellow, against white chalk.

Q. Did you visit the Rex Mills Company, with Mr. Friend?
A. No, sir.
Q. Have you brought in some samples of your bread?
A. Yes, sir.
Q. Will you please produce them?
A. Yes, sir. (Does so.)
Q. I will hand you Claimants' Exhibit 260 and 261, and ask you to state what they are.
A. 260 is supposed to be the—is the "Bulte's Best".
1863 That is the hard wheat, bleached, and the 261 is "Bulte's Excellent", soft wheat.

By Mr. Butler:
Q. Bleached? A. Yes, both bleached.

By Mr. Elliott:
Q. Now, who made the bakings of these loaves for you?
A. Why, I brought some samples, and took them down to Mr. Esterbrook, at the American Laboratory Company, I think.
Q. Kansas City?
A. Kansas City. Southwestern Flour Laboratory.

Mr. Elliott: I will recall Mr. Esterbrook.

Q. Now, tell us again, please, which of these was 261.
A. 261 is "Bulte's Excellent", made out of soft wheat, bleached.
Q. 260?
A. 260 is "Bulte's Best", bleached, made out of hard wheat.

Mr. Elliott: I will offer these exhibits in evidence.

Q. Are these loaves that are cut, corresponding loaves?
A. Yes, sir. They are corresponding loaves, both of them. You see the names on top "Bulte's Excellent" and "Bulte's Best".
Q. Does your mill sell bleached flour to B. Howard Smith, or the Consumers Bread Company of Kansas City?
A. I have nothing to do with that. I don't know. I am just running the practical end. That is all done at the main office, up here.
Q. You do not know about the selling of it? A. No.

Cross-Examination

By Mr. Butler:
Q. The main office of your mill is here in Kansas City?
A. Yes.
Q. You are a practical miller, are you, Mr. Stark?
A. Yes, sir.
Q. And have been at the business a good long while?

A. About thirty-seven years.

Q. What part of Missouri? I am not very familiar with it.

1864 By the Court:

Q. That is northeast, about one hundred miles?

A. Yes.

By the Court:

Q. On the Frisco? A. Frisco.

By Mr. Butler:

Q. Do you live at the same place Mr. Shoecraft lives?

Mr. Lyons: No, this is Clinton, Missouri.

By Mr. Butler:

Q. You have eleven hundred barrel capacity?

A. Well, twelve hundred. Maybe as high as twelve hundred. That all depends upon the condition of the weather, and the condition of the wheat, you know.

Q. Did I understand you to claim that you can control the color, by milling methods?

A. You can, somewhat, when you make your soft flour, yes.

Q. Make it too fine? A. Makes it too fine.

Q. So, you can grind the color onto it?

A. You can get it considerably whiter, but not quite as white as with the bleacher, but then you get it whiter, you know.

Q. Light color is desired in flour, isn't it?

A. Yes, that is what we want—light color, certainly.

Q. And you could make one hundred barrels more a day, at the same cost, with the bleacher, than without it?

A. I did not say that. I said by changing the cloth coarser, and grinding coarser, that makes it bolt freer, and by that, you can add more wheat, you know.

Q. So, if you threw your bleacher away, it would cost you one hundred barrels a day of product, because you would have to change your mill, and grind it more, wouldn't you?

A. You would have to change your cloth, and then just simply grind it closer, in order—that is, in our trade, they demand white flour.

Q. You would have to grind it white, instead of bleaching it white? A. Yes. It would make it a little softer.

1865 Q. And if you threw your bleacher away, or threw off the bolt, so you did not use it, it would cost you one hundred barrels a day of product, wouldn't it? You would have to readjust your mill?

A. Yes, sir, that is right.

Q. So, the bleacher saves you what it costs to make one hundred barrels of flour a day?

A. That is, the condition of the weather, too.
Q. And, to get about the same quality of color?
A. Well, you will get it granular, with the bleacher.
Q. Yes, I understand. Now, that bleacher is kind of a handy thing to color with, isn't it? A. Yes.
Q. The more bleaching, the whiter it gets, up to a certain extent?
A. Up to a point. I do not bleach very heavily.
Q. So, if you have a valve—do you have a valve on your intake pipe? Don't you? You have an intake pipe, that takes the air into the electrifier? A. Yes.
Q. With the Alsop bleacher, near the gas producer?
A. Yes.
Q. And you have a valve on that, don't you?
A. We have.
Q. Some kind of a thing to shut off the fresh air coming in?
A. The fresh air, coming in.
Q. If you shut it off a little, it bleaches stronger?
A. Well, I thought it did, but sometimes it don't. It all depends on the condition of the weather.
Q. But I know, if there is no change in the weather?
A. Yes.
Q. Take a clear day.
A. If you shut off some, it will change, but, if you shut it all off, it won't go up.
Q. The gas won't go up?
A. No. You have got to have ventilation to get it up.
Q. So that, by just turning the valve, here, it saves all the trouble of readjusting the mill, and grinding it down for the color, doesn't it?
A. Yes. Readjusting the—yes, yes, certainly.
Q. If you controlled the color by grinding, you would have to readjust your mill? A. The whole mill.

1866 Q. It would cost you, say ten per cent more—about one hundred barrels a day, out of twelve hundred?
A. Yes.

Q. And this Alsop machine that you have, all you have to do is just to wiggle the valve a little, to control the color?
A. Yes, you understand, but you get the granulation.
Q. Yes, I will come to that later. But, now as respects color, alone. A. Yes.
Q. All you have to do is just to turn a little valve, like that (indicating)? A. Yes.
Q. Sometimes you have to turn on a little more amperage, if it isn't making it strong enough?
A. Yes, a little more voltage, That is right.
Q. So, that is of immense financial advantage, isn't it?
A. Yes.

Q. Really, in the course of a year, it would be a tremendous advantage, to be able to control the color of your product by just turning that valve?

A. That is the way they are all controlled.

Q. Yes, of course. You are telling me about it a little nicer than most of them though. You grind some soft wheat, probably.

A. We grind all soft. Now, that is, we have got a hard wheat mill, but we do not run it all the time.

Q. You are speaking of soft wheat? A. Yes.

Q. Soft wheat is a good pastry wheat flour?

A. Yes, sir.

Q. Commanding a good deal higher price in the market, here, they tell me, in Kansas City, than the hard wheat flour.

A. We have a good trade on our flour.

Q. And, for pastry, the finer they get the flour, the better it is, isn't it, if it is white and soft, and nice?

A. That all depends, too. You can get it so fine it will not bake. It gets all mushy, and won't raise.

Q. So, your observation of this feature is, it not only changes the color, but it changes the granulation?

A. Yes, indeed. That is, if the miller--

Q. (Interrupting) If the miller knows how to use it?

A. Yes. That's the idea.

1867 Q. Some millers don't get as much good out of the bleacher, as others, you think? Isn't that true? They don't know how to use it?

A. I don't know.

Q. You think you get all there is in it, out, don't you?

A. I am trying to get all there is in it out, yes, sir.

Q. Now, let me see. Somebody has told me, here in court, that there is a flour known as patent flour. Is there?

A. Patent?

Q. Yes.

A. Why, when we first started milling, from stones and changed to the rolls, when we first got the middling, we called that the patented flour, but we do not have "patent" on our sacks.

Q. When did you take it off? When the roll process came in, or when the government made this order?

A. Oh, no. Here is the stock. Here is our Bulte's Excellent. We go by the brand. Here is the Bulte's Excellent.

Q. Did you ever make a patent flour, labelled patent?

A. How is that?

Q. Did you ever make a patent flour that you labelled patent? A. Oh, yes.

Q. When?

A. Oh, that has been—we called it "White Swan Patent".

Q. When did you do that? A. Do that now.

Q. So, then, you are making a patent flour now?

A. That is named Patent, but it is really—that is our best flour—supposed to be the patent, but that is Bulte's Excellent. Haven't got "Patent" on it.

Q. Did you ever make any kind of a patent, except the "White Swan Patent"? A. No, sir.

Q. Is that the only patent flour that was sold under that name?

A. Yes, "White Swan Patent", yes.

Q. Is it a patent? A. Yes, sir.

Q. What percentage is it? A. Well, now, we—

Q. (Interrupting) Now, Mr. Stark, I don't want to inquire into these percentages.

A. That is it. That is what I am going to tell you right now. The trade is different. Some people want a shorter patent, and some want a longer patent, and we have different brands.

1868 Q. And percentages is usually considered a trade secret, isn't it? A. Yes.

Q. And millers are very unwilling to divulge it, as a rule?

A. Yes.

Q. Because that gives their competitors a chance to tell their customers what their percentages is. That is it, isn't it?

A. Yes.

Q. So, you have observed, in the thirty-seven years of your business, that there is a good deal of diffidence and unwillingness on the part of millers to tell what percentages they make?

A. Oh, yes. Some of them are right out, and some of then ain't you know.

Q. Now, how do you feel about it?

A. Well, I don't feel like letting the competitors know what I am doing—what percentages I am making—making a short patent, or making a long patent.

Q. Do you suppose these other millers, who are here, now, helping in the defense of this law suit, would take advantage of you, if you were to tell your percentages?

A. I don't know whether they would or not. I don't think they would.

Q. Then, let us have them, if you think you can trust these other fellows, that are here.

A. We make about forty, "Excellent", and about a forty of "Swan", the second. That is the second grade, you know. Then a ten per cent low grade—what we call low grade. That is what we run it. We have got different runs, though. We have got a straight run, where we take out about a five per cent.

Q. You do not hesitate so much to tell about the forty per cent, as you do about the ninety-five per cent, do you?

A. Oh, I don't know. There is no secret about it. We do not care about publishing our percentage.

Q. Well, now, do I get the impression from you that it damages flour to grind it, so that it is white?

A. Yes, sir. You can damage flour, that you can get all kinds of complaints, if it is ground too soft.

Q. The bleaching by the Alsop process doesn't make it [an] finer, does it.

A. No. That is where you have got the advantage of
1869 getting further apart on your rolls, and of course, on your cloth and still have the color. You can get the color without it.

Q. Now, you can get the color by the bleaching process, that equals the other, by grinding? Grinding so much will be the equivalent to Alsop bleaching medium, so much?

A. By grinding?

Q. Yes. A. No, it would make it too soft.

By the Court:

Q. The flour? A. You could not get as much.

By Mr. Butler:

Q. You can get it cheaper, and get more of it from the Alsop machine? A. Yes, sir.

Q. Now, you say that the grinding of flour fine hurts the quality of it? A. How is that?

Q. Do you say that the grinding of flour fine hurts the quality of it? A. Yes.

Q. Were you here when Mr. Larabee testified yesterday?

A. No, I went out.

Q. Do you know Mr. Larabee's mill, out at Hutchinson?

A. No, sir. I have never been there.

Q. Were you here when Mr. Abbott testified that Mr. Larabee could, by good milling methods, make a lighter flour, ninety per cent patent, than some of them could make a seventy-five per cent patent, that did not have as good milling methods?

Mr. Scarritt: We object to that, if your Honor please, object to him stating the testimony of other witnesses, as improper.

Mr. Butler: I want to find out from him whether he knows Mr. Larabee's mill, and I want to find out from him whether that is the way to ruin flour, or make good flour.

The Court: He may answer.

Mr. Scarritt: Mr. Larabee never said anything about grinding fine.

Mr. Butler: Abbott said so.

1870 Mr. Scarritt: No, he said by improved machinery.

The Court: Go on.

A. I don't know what Mr. Larabee said.

By Mr. Butler:

Q. Don't you know about his mill over here at Hutchinson?

A. No, I do not.

Q. He has a mill that grinds twice as much as anybody else's mill. A. Maybe. I don't know.

Q. And he makes ninety per cent, before bleaching, and since bleaching, and his flour is lighter than a seventy-five per cent flour, and it is in the markets of the world, everywhere, all over the country, and abroad; his mill is of concrete; he has the best machinery that is made; spends money on it; keeps it clean, and keeps the weevil out of it. Now, do you say that that kind of milling injures the product of wheat?

A. The kind of milling he does?

Q. Yes.

A. If he grinds it down it would, just the same, yes. That is, I am speaking, from a soft wheat standpoint.

Q. Oh, you are speaking from a soft wheat standpoint?

A. Yes, sir.

Q. How much yellow berry was in this flour you brought in here? A. A don't know.

Q. What did you bring this in for? To show how you can grind color into it?

A. Yes, grind color into it, exactly.

Q. None of these is bleached?

A. Yes, one on the outside is bleached, there.

Q. The middle one is a bleached?

A. No, the middle one is the granular stock.

Q. Are there three kinds here?

A. Yes. There is one bleached, there, that ain't quite as white, you know, at the end.

Q. Now, where is the bleached—at the middle, or at the end? A. At the end.

Q. And then, the one in the middle is the granular, isn't it?

A. Yes. All three are the same quality.

Q. And the one at the left hand end is not bleached?

A. No. No, that is not bleached.

1871 Q. So, the whitest, here, is ground?

A. Yes, sir. That reduction, there.

Q. Now, come here, and let us explain that all to the jury.

Mr. Scarritt: That goes in evidence.

By Mr. Butler:

Q. This is all from soft wheat? A. Yes.

Q. No turkey in this, and no yellow berry in it? A. No.

Q. It is the Missouri wheat?

A. It is the Missouri wheat, I think. Now, I'll tell you what we done, in order to get that, to show that you can grind color into it, we went over here to the nearest mill—Wagener-Gates Company.

Q. Oh, this was not ground at your mill? A. No.

Q. Wagener & Gates? A. Yes, sir.

Q. Do they have an A'sop machine around there?

A. They have, I guess.

Q. You are sure that none of the gas got into the flour—this flour?

A. No. That was before. That come off the roll, you know, before ever it got near the gas.

Q. But you are sure the gas did not go up in the mill, and bleach it? A. No, I guess not.

Q. Now, there are three colors here. The lightest color is made by grinding, the middle one is made by bleaching, and the other color is the natural color. Am I right about that?

A. Yes. Now, I want to explain that.

Q. Now, let me make that plain. I will give you a chance to explain it. Now, I want to ask you, because how this thing looks will never appear in the record, unless we state it. The part that is bleached is in the middle, you said?

A. No. This is it.

Q. At the end? A. Yes. This is the product of—

Q. (Interrupting) The lightest one, at the end, near the figure "1", was ground in?

A. Yes. That is as near as I can say. Now, we can put it out again, and make the same thing over again.

Q. No, that is all right. Now, that in the middle was
1872 not bleached? A. No.

Q. Not ground down so fine? A. No.

Q. And that other one, where the "2" is, is bleached?

A. Yes.

Q. Now, isn't it very hard for you to distinguish between the middle and Number 2?

Mr. Scarritt: Not from here.

Mr. Helm: We have got a dark light there.

Mr. Butler: Your Honor, I move to strike out the statement of Judge Scarritt.

The Court: I was not observing that, just then.

Mr. Butler: I was interrogating the witness with respect—

Mr. Scarritt: (Interrupting) No, Your Honor, he was testifying. He was telling what was there. He was testifying and I tried to testify, too and that's all there is to it.

The Court: Now, what was the question?

Mr. Butler: I was cross-examining the witness, in the form of leading questions, and I had asked him if it was not difficult to distinguish between two kinds of flour, the kind at the end next to the figure "2" and the kind at the middle, and Judge Scarritt, who was looking over the shoulder of a juryman, interrupted and answer by saying "Not from here'.' I move to strike that out as improper.

The Court: If that occurred, that certainly should be stricken out.

Mr. Butler: That did occur.

Mr. Scarritt: But it occurred, Your Honor, in just a little different way, because he was telling the jury which was whiter, and which was not.

Mr. Butler: I was asking the witness a question.

The Court: Mr. Butler has a right to ask the witness leading questions, and you gentlemen have not, with your witness. Now, let him answer the question.

By Mr. Butler:

Q. Now, Mr. Stark, I want to examine you further con-
1873 cerning this sample that you prepared for Mr. Elliott, in your direct testimony.

Mr. Scarritt: We have not had a chance to offer it, if Your Honor please, and he has got it here before the jury, talking about it. But, we have no objection to that.

By Mr. Butler:

Q. Now, Mr. Stark, when I was interrupted by Judge Scarritt, I asked you whether or not it is not, here in this light, very difficult to distinguish between the specimen of flour at the end, nearest to the figure "2" and that in the middle.

A. Yes, sir.

Q. It is very difficult, isn't it?

A. Well, you could tell it, by holding it up.

Q. So that the color between the granular, in the middle, and the bleached at the end, nearest to you, is very nearly matched? A. I call that about a couple of shades lighter.

Q. But it is much closer together than the one that was ground down?

A. Now, whenever you are done, I want to answer your question.

Q. You will answer it right now.

A. I say there is two shades difference there.

Q. The one that is ground down, to the light color, is the whitest of the three? A. Yes, sir.

Q. And it is much more whiter—it is much whiter than the bleached sample, isn't it? A. Yes, sir.

Q. Therefore, the difference between the two unbleached samples is much greater than the difference resulting from bleaching. Isn't that true?

A. That is true. Now, I would like to explain it.

The Court: Go on and explain it. This is very unusual but you may go on and explain.

A. (Continuing) They are both granular, and the other is not granular. Now, you take that granular flour, and grind it, and then bleach it, it will be still whiter than the
1874 bleached flour—than that ground flour. That is what I mean.

Q. That is right. You can bleach down that white color that you get, and make it still whiter, can't you?

A. Yes, sir.

Q. What's that? A. Yes, sir, that is right.

Q. And you can bleach it until it comes down very near as white as that piece of chalk that I lay beside it, for the purpose of illustration? A. No, I do not think you can.

Q. Well, I know, but very near?

A. No. That is a bluish—I never bleach my flour that way.

Q. You don't like to make it like chalk, do you? A. No.

Q. Now, this thing that you have described with respect to soft wheat does not apply with the same degree of force with respect to the hard wheat? A. What?

Q. The soft wheat is weak in gluten, isn't it?

A. Yes. That is, compared to the hard wheat.

Q. The hard wheat is stronger in gluten? A. Yes.

Q. The Kansas hard is very strong in gluten? A. Yes.

Q. The turkey hard, isn't it? A. Yes.

Q. It will, therefore, stand a lot of grinding, won't it?

A. Grinding?

Q. Yes. A. Oh, yes, certainly.

Q. And you can grind it down to a nice color, too, can't you? A. Yes, but you won't grind it for hard wheat.

Q. If you grind it down nice and white, you might be able to sell it for soft wheat flour?

A. You can get it as white as soft wheat.

Q. Now, Mr. Stark, do you think, honestly, that it is better to control your color by nitric acid, than it is by mill methods?

Mr. Scarritt: We object to that as not based on the evidence, and calling for an improper conclusion.

The Court: He may answer.

A. You mean the electric bleaching?
Q. No, I mean nitric acid. A. The Alsop process?
Q. I mean nitric acid.
A. Well, I don't know anything about that.
1875 Q. Well, now, just let me put that at you, as an experienced miller. Do you think it is perferable to control the color of your flour by nitric acid treatment, in a liquid or gaseous form, than by milling methods?

Mr. Scarritt: Objected to for the same reasons.

A. Yes, I do.
Q. Did you ever bleach with it? A. No, sir.
Q. Did you ever hear of wheat being bleached by the sulphur fumes, or sulphur?
A. No, sir. Oh, I have read it, but I never saw it. Don't know anything about it.
Q. Did you ever hear about flour being bleached by sulphur?
A. No, sir.
Q. Now, wouldn't you rather control the color of your flour by some other chemical, than nitric acid, like sulphur? Don't you think it is a bad thing to put nitric acid in the flour?
A. I don't know anything about sulphur.
Q. But, you say, in order to save your fuel, and grinding, and oil, you would rather use nitric acid to control your color?
A. This Alsop electric bleacher, yes, sir.
Q. Now, you understand that nitric acid is employed by the Alsop electric bleacher? A. Of course, I am no chemist.
Q. But that is your understanding?
A. I understand it that way, yes.
Q. That is your understanding of it? A. Yes.
Q. Did you ever buy nitric acid in a drug store?
A. Never in my life.
Q. Did you ever see any nitric acid?
A. No, sir. Never had any use for it.
Q. You never saw nitric acid?
A. No, I don't believe I did.
Q. You don't know its properties? A. No, I do not.
Q. Do you know that nitric acid will dissolve copper and zinc?
Q. Oh, yes. But I have had no occasion to use it. Never saw it.

Q. So, you would rather put that kind of stuff in your flour, to control the color, than to spend money for oil
1876 and coal?

Mr. Scarritt: I object to this as incompetent, irrelevant and immaterial, and having nothing to do with the issues in this case.

The Court: The witness said he knows nothing about it. He may answer.

Mr. Scarritt: We save an exception.

A. Will you please read the question?

(Last question read)

A. Well, now I would say this. I do not believe there is no miller wants a bleacher that is injurious to health, or injurious to the flour. That, I don't know whether it is injurious or not.

By Mr. Butler:

Q. So you assumed then, when you answered that question, —you assumed that nitric acid in flour was harmless, didn't you? A. No, I don't know. I never tried it.

Q. But you must certainly think so, or you wouldn't put it in.

A. I never tried it on copper, to see whether it would eat copper, or not, and I don't know anything about it.

Q. Did you ever smell the gas? A. The fumes?

By the Court:

Q. The Alsop gas. A. Yes.

By Mr. Butler:

Q. Do you like it?

A. Oh, yes. It aint a very unpleasant smell.

Q. It is not very unpleasant? A. No.

Q. Do you smell it in the flour?

A. Not when you take it in the flour. You can smell it when it goes in the tanks, if you open the door.

Q. Can you smell it in the flour bin? A. No.

Q. Smell it when it comes out of the agitator?

A. If you open the door, yes.

Q. That is the flour bin, isn't it, where the flour runs in out of the agitator? Isn't that a flour bin?

A. No, I do not have a flour bin. This goes direct to
1877 the packer.

Q. And you can smell it, as it comes out of that?

A. You can, if you open the hole.

Q. You have to open it, in order to let the flour out?

A. No. That flour runs right into the sack.

Q. Well, we mean the same thing. I am not a miller. How big is your packer? A. The flour packer?

Q. Yes.

A. It has a round tube, where you put the sack on. A great many mills have hoppers. I do not have that.

Q. Do you make your flour yellow, sometimes?

A. Do I make it yellow?

Q. Does the bleaching make it yellow?

A. No. Never did any.

Q. Do you sometimes shut down your mill?

A. Oh, we have accidents, certainly. Every mill would.

Q. That would leave the agitator full of flour, wouldn't it, if you shut down your mill?

A. The minute you stop, your bleacher stops.

[A.] I supposed it did not stop.

A. The minute you stop your mill, you stop the bleacher.

Q. That is the way you are fixed, do you say?

A. Yes, sir.

Q. Supposing it was not fixed that way. What effect do you think it would have, pumping the gas in there?

A. It would bleach it too much, of course.

Q. What hurt would it do, if a little bleaching is good, why isn't a lot good?

A. It would probably make it too white. It would come bluish white, or too light in color. It would not do, you know. I do not bleach very much.

Q. You bleach very lightly? A. Yes, sir.

Q. How many horse-power do you have?

A. Oh, I think our machine is about six horse-power.

Q. For eleven hundred barrels?

A. Yes, sir. We have only got one machine for the whole business.

Q. And that is divided between how many bleachers?

A. Three. Only using two, though.

1878 Q. Is patent flour lighter than straight flour in color?

A. Oh, yes. Yes, but you may call patent—

Q. (Interrupting) Can you bleach one, and leave the other unbleached, and make them look very near alike?

A. Oh, no.

Q. What is that?

A. No. We do not bleach our low grade.

Q. I am not speaking about your low grade. I am speaking of your patent and straight. You bleach your straight, don't you? A. We make it straight sometimes.

Q. You can bleach your straight, it makes it lighter than a patent, can't you? A. No, you cannot.

Q. You cannot bleach a straight to make it lighter than a natural patent?

A. No, sir. Not considering the quality of it.

Q. I mean, make it lighter in color.

A. Oh, you can bleach it white, but if you put water on it, it gets dark, you know.

Q. Oh, if you bleach it too much, and put water on it, it turns dark? A. Certainly.

Q. If you over bleach it, it turns dark in water?

A. Well, not necessarily.

Q. What do you mean by saying it turns dark, if you bleach it too much?

A. You can make it a chalky white, but it is not a desirable color.

Q. So, you cannot make a natural color with the Alsop bleacher, can you? A. Natural color?

Q. Yes.

A. You could make it—bleach it up white, and make it according to the age of a couple or two or three months. Yes, you can, just the same.

Q. Can you adjust your machine so as to make it equivalent to a week's aging—bleach equivalent to a week's aging?

A. Yes, you can do that.

Q. The equivalent to a month's aging?

A. You can do that, too.

Q. To two months' aging? A. Sure.

Q. Three months' aging? A. Yes.

Q. Four months' aging? A. I never tried it that far.

Q. So, then you can make the soft, fresh flour match up with flour of a given age, and look alike in color, can't you.

1879 A. At that certain proportion, taking off the gas, yes, certainly.

Q. By controlling your gas? A. Yes.

Q. Now, is fresh flour an inferior flour, when it is newly milled, to flour that is naturally aged?

A. Sure, they are. It is not inferior, if they get good, sound wheat.

Q. Now, do you think putting nitric acid in it naturally ages it?

A. Running it through the process? Yes, makes it whiter.

Q. You told Mr. Elliott, as I understood you—

Mr. Elliott (interrupting): Now, if Your Honor, please I want to object to that previous question, because it is perfectly manifest that Mr. Butler is using this term "nitric acid" in one sense, and the witness is using it in another. He is not a chemist, and he is replying, as I understand it, on the basis of this process, and Mr. Butler is putting nitric acid to him, and I do not think that is fair.

Mr. Butler: I am going to put nitric acid to everybody, about this bleaching.

Mr. Scarritt: He is talking about the Alsop process.

Mr. Butler: The evidence shows in this case it is nitric acid, or tends to show it.

The Court: Go on.

By Mr. Butler:

Q. So, by the use of nitric acid, you can match fresh flour, in color, to flour of the same kind, of any age, up to three months?

Mr. Scarritt: Same objection.

The Court: He may answer.

A. Up to three months, yes, with the bleacher, you can make it the same.

Q. And that is what you do habitually, isn't it?

A. Certainly.

Q. Yes. So as to make your fresh flour look exactly the same as the naturally aged flour?

A. Sure, as near as we can.

Q. And you know that the naturally aged flour is better than it was when it was fresh, don't you?

A. Sure. It is whiter, you know, and it is dried out.

1880 Q. And you know, don't you, that the nitric acid used by the Alsop bleacher puts nitrites in your flour, which will show on the Griess test, right then and there? You know that, don't you? A. Well, no.

Q. Now, then, just a minute. Have you never applied to your freshly bleached flour this test—this clear liquid, that will bring out the pink color on the bleached flour, and won't bring it out before it goes through the bleacher?

A. I never tested that, no.

Q. Did you ever see that done? A. No, sir.

Q. Did you ever hear of it?

A. Yes, I have heard of it, but never saw it.

Q. Heard of others having done it? It is a matter of common knowledge, isn't it, among millers, that this Griess test will turn the freshly bleached flour, after it has been subjected to the nitric acid of the Alsop bleacher, pink, and that the flour, just before it goes into the agitator, will not turn pink. You know that don't you? A. No, sir, I do not.

Q. Do you know that the nitrites produced in the flour are poison?

A. I am no chemist. I don't know anything about that.

Q. No, but a man who will save one hundred barrels a day with nitric acid, rather than mill, is entitled to answer some questions.

Mr. Elliott: I now offer the exhibits in evidence, being numbers 257, 258 and 259.

Redirect Examination

By Mr. Elliott:

Q. Mr. Stark, I will ask you in respect to bleaching, if you have ever put anything into your flour, except the air as it went through this Alsop electrical machine, and went to the flour.

A. Never, no, sir.

Q. Did you ever buy any nitric acid and pour on your flour?

A. No, sir, never.

1881 Recross Examination

By Mr. Butler:

Q. You never used the Williams' process, that used nitric acid? A. No, sir, and I wouldn't have it, neither.

Q. Why not?

A. Because I understand it is kind of acid that you have got to bleach it with.

Q. You would not use the Williams' bleacher? A. No.

Q. You understood that the nitric acid used by Williams is poisonous?

A. That is the way I understand it. I would not use it.

Q. But you understand the Alsop process uses pure air?

A. Pure air, with the electric flame going through.

Q. Now, if it were shown to you that the Alsop process uses exactly the same gas, called NO_2, nitrogen peroxide gas, then you would throw that out, too, wouldn't you?

A. Yes, if they could prove it to me.

Q. Now, if it was shown to you that the Alsop process has convicted the Williams' process of infringing, because it uses the same gas, you would feel like throwing theirs out, wouldn't you? A. I don't know about that.

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

Witness excused.

John T. Shram, called as a witness on behalf of the claimant, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Scarritt:

1882 Q. You may state your name.

A. John T. Shram.

Q. Where do you live?

A. 607 West 38th, Kansas City, Missouri.
Q. What is your business?
A. I am head miller for the Southwestern Milling Company.
Q. That is the mill that has here been spoken of? What is the brand of flour that you prepare?
A. We put out, for our best brand, "Aristos".
Q. "Aristos" flour? A. Yes, sir.
Q. That is the brand of flour you make? A. Yes, sir.
Q. Have you an Alsop bleacher in your mill? A. We have.
Q. Just state to the court and jury when you commenced using that bleacher at that mill.
A. Well, pretty near four years ago; about three years and ten months since we used it at the Southwestern mill.
Q. Well, while you were using it, did you bleach all your flour?
A. We bleached it all, up to the first of March a year ago.
Q. First of March, 1909? A. Yes, sir.

Q. Then you stopped bleaching all your flour? A. Yes, sir.
Q. Then, when did you begin again?
A. We began along about January.
Q. January of what year?
A. 1910, and bleached up until March—well, about the last of March, as near as I can remember it.
Q. 1910? A. Yes, sir.
Q. Then, you stopped again? A. Yes, sir.
Q. And during all that time, when you were bleaching, you bleached all your flour? A. All the flour bleached, yes.
Q. Including the "Aristos" brand? A. Yes, sir.

Cross-Examination

By Mr. Butler:
Q. Is there any "Aristos" that is not bleached?
A. There is "Aristos" that is not, since the first of March. No "Aristos" bleached from the first of March 1909, until about January 1910.
Q. I have been given to understand that the "Aristos"
1883 patent found in the markets of Kansas City is an unbleached flour.

Mr. Scarritt: At the present time.

A. Yes.

By Mr. Butler:
Q. And varying kinds? You do not know, of course, how fast it was consumed, and some may be out yet, that was bleached in the old days?
A. It might possibly be; I do not know, but we have not bleached any flour at home here, for anything out—

Mr. Butler: That is all.

Witness excused.

B. Howard Smith, called as a witness on behalf of claimants, being duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Scarritt:

Q. Your full name is Mr. B. Howard Smith? A. Yes, sir.

Q. Where do you reside? A. 3038 Park Avenue, this city.

The Court: Kansas City, Missouri?

A. Kansas City, Missouri.

By Mr. Scarritt:

Q. How long have you resided in Kansas City, Missouri?

A. About 25 years.

1884 Q. What is your present business?

A. Bread baking business.

Q. How long have you been in that business?

A. About 30 years.

Q. Where?

A. Indianapolis, Indiana, and at Kansas City, Missouri.

Q. Have you been in the bread baking business ever since coming to Kansas City, Missouri? A. Yes, sir.

Q. How many bakeries have you at this time under your control? A. Six.

Q. All located at Kansas City, Missouri?

A. Five at Kansas City, Missouri.

Q. Where is the other one? A. Kansas City, Kansas.

Q. What character of bread do you bake? What I mean is, do you bake any pastry, anything of that kind?

A. No, sir; all bread.

Q. Light bread, and rolls, and biscuits?

A. Bread and rolls.

Q. You sell it on the market here? A. Yes, sir.

Q. Is it generally used here? A. Yes, sir.

Q. How many loaves of bread a month is your output?

A. About 1,700,000.

Q. A month? A. Yes, sir.

Q. That includes your six plants, does it?

A. Yes, sir.

Q. Or does it leave out your Kansas City, Kansas, plant?

A. It includes all of them.

Q. Of course, we all understand that the dividing line between Kansas City, Missouri, and Kansas City, Kansas, is simply an imaginary line, about the middle of one of our principal streets? A. Yes, sir.

Q. All practically the same city? A. Commercially, so.

Q. Commercially the same city? A. Yes, sir.
Q. One million, how many loaves?
A. Seven or eight hundred thousand loaves.
Q. Almost 2,000,000 loaves a month?

The Court: How much?

A. One million, seven or eight hundred thousand a month.

By Mr. Scarritt:

1885 Q. Do you use bleached flour in baking your product?
A. We use about 50 per cent bleached.
Q. Bleached flour? A. Yes, sir.
Q. And the other 50 per cent unbleached flour?
A. Yes, sir.
Q. Why do you mix them?
A. We get a better loaf of bread out of the two mixed, than we do out of either alone.
Q. Have you ever made bread from bleached flour, itself?
A. Yes, sir.
Q. What is the character of that bread, made out of bleached flour in quality and strength, as compared with the bread made out of the same flour unbleached?
A. I never have seen any difference.
Q. What is the difference in color of the bread made out of bleached flour, as compared to that made out of the same flour, unbleached? A. None, that I know of.
Q. No difference in color? A. No, sir.
Q. The bleached flour made a lighter loaf?
A. No, not that is discoverable.
Q. What is the difference in the quality of the bread made out of unbleached flour, from new wheat, as compared to bread made out of bleached flour?
A. Well, the difference is this, that flour newly ground, or delivered to the bakery, soon after grinding, or made from new wheat, shows a youngish appearance, does not have the volume. It is pretty hard to make a decent loaf of bread out of it.
Q. Does it dough up as well?
A. It doughs up as well, but the gluten does not show the same degree of quality.
Q. I have heard some of these bakers talking about "running." Does it run?
A. Yes, well, you might say slacks, slacks in the dough,—softens up some.
Q. Will flour of that character make as good a loaf of bread as the same flour bleached, after being bleached?
A. No, sir, it does not, whether it is artificially or
1886 naturally bleached.

Q. From whom do you buy your bleached flour?

A. At the present time we are using the principal part of the ground flour ground by the Bulte Milling Company.

Q. That is managed by the gentleman who was just last on the stand? A. I don't know that.

Q. Did you hear Mr. Stark's testimony?

A. I did not discover what mill he represented.

Q. But it is the Bulte Milling Company?

A. Yes. They have two mills, I believe.

Q. Which is the other mill?

A. I think they have a mill down in Clinton, Missouri, where they grind soft wheat.

Q. And you get flour from both mills?

A. No; we don't use anything but the hard wheat flour.

Q. And that is ground in the mill here? A. Yes, sir.

Q. When you use hard wheat flour, from what locality, if you know, does this wheat come? A. Kansas.

Q. Where do you dispose of your produce, principally—your bread?

A. Principally in Kansas City, Missouri, and Kansas City, Kansas. We ship some to the country.

Q. You bake it and sell it right here? A. Yes.

Q. Use it in the restaurants and the clubs and the homes, and all around, generally? A. Yes, sir.

Q. Who are your principal competitors, if you have any?

A. Our principal competitor is the housewife.

Q. That is, if you don't make as good bread as she does, she won't buy from you? A. Yes, sir.

Mr. Butler: We object to that as incompetent, irrelevant and immaterial.

The Court: Objection sustained.

By Mr. Scarritt:

Q. But you do dispose of practically 2,000,000 loaves a month?

1887 A. Something less than that.

Q. In this vicinity? A. Yes, sir.

Q. And all of your bread that you sell, now, is made half out of bleached flour and half out of unbleached flour, mixed?

A. Yes, sir.

Q. What brand of unbleached flour do you use?

A. We are using, and have been for the last several months, "Pillsbury's Best".

Q. What was the brand that you used previous to that?

A. We have used several different brands of Minnesota and Dakota flours, in the past.

Q. Just one other question. You have been in the city here for twenty odd years? A. 25 years.

Q. And when you came here, you came here to engage in this same business that you are in now? A. Yes, sir.
Q. Where were you located when you came here?
A. Ninth and Oak streets.
Q. How much of a plant did you have?
A. Well, I had one oven, and an output of about 500 loaves a day.
Q. One oven, and 500 loaves a day? A. Yes, sir.
Q. How much help did you have?
A. I had about two bakers, and one wagon.
Q. Two bakers and one wagon? A. Yes, sir.
Q. Outside of yourself? A. Yes.
Q. Yourself, and two bakers, and one wagon?
A. Yes, sir.
Q. And your business, during that time, has increased from what it was then, to what it is not? A. Yes, sir.

(No cross-examination.)

Witness excused.

1888 J. A. Gillis, called as a witness on behalf of the claimants, being first duly sworn, was examined by Mr. Scarritt, and testified as follows:

Direct Examination

By Mr. Scarritt:
Q. What is your name? A. J. A. Gillis.
Q. Where do you reside?
A. Kansas City, Missouri, 2630 Garfield Avenue.
Q. What is your present occupation?
A. Manager of the Mid-Day Club.
Q. That is the club on the 14th floor of the Commerce Building?
A. Commerce Building.
Q. What is your vocation, or profession?
A. Manager of hotels, clubs, and restaurants.
Q. Where were you located before you became Manager of the Mid-Day Club?
A. Green Bay, Wisconsin.
Q. Where were you located previous to going there?
A. On the Santa Fe Railway, Harvey System.
Q. Harvey System of the Santa Fe Railway?
A. Yes, sir.
Q. Have you been in those positions during the last five or six years? A. Yes, sir.
Q. And, for some time before that, on the Santa Fe System?
A. Yes, sir.
Q. The Harvey eating house system? A. Yes, sir.
Q. What was your business in Wisconsin?

A. Manager of a hotel.

Q. What was your business when you were with the Harvey System?

A. The same; manager of hotels.

Q. Manager of their eating houses? A. Yes, sir.

Q. What kind of bread do they use at the Mid-Day Club, over here?

A. They use bread baked by this Smith Bakery, entirely.

Q. Entirely? A. Yes, sir.

Q. Have you ever had any experience or observation of
1889 bleached flours, previous to going over here to the Mid-Day Club?

A. I used bleached flour for the last six years—nearly six years. Ever since they commenced to make it.

Q. You used it in Wisconsin? A. Yes, sir.

Q. And did they use it on the Harvey System?

A. Yes, sir.

Q. In the stations that you managed? A. Yes, sir.

Q. Why did you use it?

A. Well, we thought it was better flour than the other—made nicer bread.

Q. In what respect?

A. Well, it was sweeter, I think, and firmer.

Q. Lighter in color? A. Yes, sir.

Cross-Examination

By Mr. Butler:

Q. You think bleaching changes the taste of bread, and makes it sweeter?

A. I think it makes it sweeter, that is all.

Q. Is it a distinct change? A. Slight.

Q. Are you familiar with the chemical action that results in that, that produces the sweetness?

A. No, I don't know anything about that.

Q. You have spent a great deal of your life, I take it, catering to the tastes of people? A. Forty years.

Q. I suppose you have become quite familiar with the tastes of people and qualities of food, and so forth?

A. Yes, sir.

Q. Are you familiar with flour bleaching?

A. No.

Q. That is, you are familiar with bleached flour?

A. Yes, sir.

Q. You do not have to do with the methods, but with the products, I take it? A. Yes, sir.

Q. And of course, flour being an important matter, you would become familiar with the bleached product?

A. Only in the difference that it made in the loaf. That would be all.

Q. And, in other important articles of food, have you
1890 considered the effect of other substances, too, I have no doubt, upon taste? A. Some.

Q. You use, in your business, some oat meal, and sugar, and cream? A. Yes, sir.

Q. Have you come across the use of formaldehyde in that?

A. I never have.

Q. You don't know, then, what effect formaldehyde would have upon the flavor of the oat meal and milk and cream, do you? A. I don't know.

Q. And coffee? Have come across some coffee that was made to look nice by the chromate of lead?

A. No, sir.

Q. You don't know whether chromate of lead affects the color? A. I never tried it.

A. And, French peas? Do you know that substance?

A. I know French peas.

Q. Have you ever been able to ascertain what the effect of copper sulphate, used to preserve the French peas, was?

A. No, sir.

Q. Well, have you furnished some cod cakes, sometimes, to your customers? A. Occasionally.

Q. Do you find some borax in that? A. I never have.

Q. Have you learned what effect borax, in cod fish, has?

A. No.

Q. Or boracic acid, in eggs? A. No, sir.

Q. So, then, the only thing that you have been able to notice in the way of food adulteration was that bleached flour changes the taste of the bread slightly, and makes it whiter?

A. That is the only article that I have ever had, in that line. I have never used anything with formaldehyde in it, that I know of.

Q. How can you tell? Watch it from the time the cow lets the milk down?

A. But the pure stuff from a fellow that you know is honest; that is all I can go by.

Q. Just go by character? A. Yes, sir.

Q. What test have you made of peas, for sulphate of
1891 copper?

A. I have never tested them.

Q. You know that formaldehyde is used in milk—not from experience.

A. I have heard that, but I have never seen it used.

Q. But you have guarded against it, haven't you.

A. As much as possible.

Q. And you know the coffee berry was polished over with a chromate of lead?

A. No, sir. I never heard of that.

Q. You know that borax was put in buttermilk, to keep it?
A. No, sir.
Q. Never guarded against that? Or sulphate of copper, in French peas? A. Never knew that.
Q. Or saccharin in canned peaches?
A. No, sir. I know there is sugar in canned peaches, that is all I know—fruits.
Q. So the only thing you ever heard of—
A. (interrupting) I have heard of all those things you have mentioned, but I say I have never used them.
Q. But I know; But, as a matter of common reputation, all those things have been used to adulterate foods?
A. They have been. I don't know whether they have, since the pure food law went into effect or not.
Q. But, respecting bleached flour bread, you say the bread is sweeter? A. I think it is, yes, sir.
Q. Improves the flavor distinctly?
A. I can notice it.
Q. How is that?
A. I think I can notice the difference.
Q. So you are able to notice the difference in taste between bleached flour bread, and unbleached flour?
A. Well, I might be fooled in that.
Q. Oh, I know; I am not going to grab any loaves, and run up to you and ask you to try them. I mean, as a general proposition, can you?
A. What I mean is this. I have never seen where bleached flour has made any deterioration in bread.
Q. But, on the contrary, it makes it sweeter?
A. Yes, sir.

Q. But what the chemists say of the sweetness,
1892 whether it is the sweetness of health, or the warning of a peril, you don't know, as a pharmacologist, or toxicologist, or a chemist, or anything of that sort?
A. No, sir.

Redirect Examination

By Mr. Scarritt:

Q. Did you ever hear, Mr. Gillis, that the Government allowed these peas that are being talked about, to be preserved with sulphate?

Mr. Butler: We object to that.

The Court: Objection sustained.

By Mr. Scarritt:
Q. How many members of the Commercial Club are there?
A. Mid-Day Club?
Q. I mean the Mid-Day Club. A. 450.

Q. You serve meals there, and they all eat there, off and on?

A. Off and on, during the month; average 150 to 250 a day.

Q. That is the Club that Mr. Ward and Frank Hagerman, and some other gentlemen here organized? A. Yes, sir.

Q. Now, how many people did you have eating at your hotel, up in Wisconsin during the years you were there?

A. About 208.

Mr. Butler: There will be no dispute about him being an expert.

Mr. Scarritt: I am not qualifying him; I am qualifying the public.

Q. You had about 200 a day, at your hotel up there?

A. Yes, sir.

Q. How many people, on an average, eat at your Harvey eating—houses, on the Frisco, every day?

A. On the Santa Fe? From 300 to 500 a day.

Witness excused.

1893 W. C. Dunn, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Scarritt:

Q. What is your name? A. W. C. Dunn.

Q. Where do you live? A. Independence, Missouri.

Q. What is your business? A. I am a miller.

Q. What mill or mills are you employed in?

A. Wagoner-Gates Milling Company, Independence, Missouri.

Q. How long has that mill been in existence there?

A. I don't know. I know it for 23 years.

Q. You do not know how much longer it has been there?

A. No.

Q. Have you been with it for 23 years?

A. Lacking about 60 days.

Q. You are head miller there? A. Yes, sir.

Q. Has that mill installed in it an Alsop bleacher?

A. Yes, sir.

Q. When was it installed? A. Four years ago.

Q. Did you bleach all the grades of your flour?

A. We have.

Q. Do you sell that on the market here?

A. Some of it in Kansas City, yes, sir.

Q. You have a grade that you sell principally to the family trade, do you? A. Yes, sir.

Q. Has that grade been bleached?

A. Yes, sir; has been.

Q. Where do you buy your wheat?

A. We get as much local wheat as we can, and buy it everywhere ye can find the wheat we need. I don't know anything about the buying of the wheat.

Q. You know where it comes from, from the cars and things of that kind—you know it comes from Kansas and around here? A. Yes, sir.

Q. Now, what effect does the bleaching have on flour, with respect to aging it?

A. Well, some of the flour it will whiten—has a tend-
1894 ency to dry it. Some, it dries, and has a tendency to darken.

Q. Now, what flour does the process have a tendency to dry, and which it whitens? A. Well, the higher grades.

Q. What flour does this process have a tendency—and it also takes some of the moisture out of the high grade?

A. The process of bleaching has a tendency to dry the higher grades, and to whiten them. That is what I mean to say.

Q. And have a tendency to take some moisture, also, out of the lower grades? A. Yes, sir.

Q. Now, is it possible, in your experience or observation, to make a low grade of flour, by bleaching it, look like a higher grade of flour that is unbleached? A. No, sir.

Q. In your experience and observation, does the bleaching of the different grades of flour have the same influence, as to color, respectively, or does it make the lower grades a little darker, and the higher grade a little lighter?

A. I think it makes the lower ones darker; and the higher grades whiter.

Q. I believe you said that the bleaching of the flour was the same as the aging of the flour? I do not know whether you answered that question or not.

A. Practically the same thing.

Q. That is, the Alsop bleacher has the same effect, on flour that it acts on at all, as nature has, on flour that it acts on, in time?

Mr. Butler: That is leading, and because it is leading, I will object to that.

The Court: It is leading.

By Mr. Scarritt:

Q. What effect, in your observation and experience, does the Alsop process have in bleaching of the higher grades, in respect to aging?

Q. Well, it has the same effect as aging.

Q. Now, you say that a lower grade can not be made, by bleaching, to resemble a higher grade, unbleached, or a high grade, bleached?

A. I cannot do it; I have tried it.

Mr. Butler: That is objected to as leading, and I move to strike that out.

Mr. Scarritt: I have not finished the question yet.

The Court: Go on.

1895 By Mr. Scarritt:

Q. Have you made any tests in that regard?

A. Yes, sir.

Q. Will you take out these things, Mr. Dunn. I am afraid I will disturb them (referring to exhibits). I believe your mill makes two grades of flour, doesn't it?

A. Yes, we make four.

Q. Now, I hold in my hand three glass panels, upon which there appears to be some flour? What do you call it—mixing it out this way—slicked out? A. Yes, sir.

Q. I will get you to state what that one is, that I now hand you? A. That is a low grade flour.

Q. That is a low grade flour? A. Yes, sir.

Q. I notice on one side you have "S. R. B." What does that mean? A. Standard R. Bleached, "Red Dog."

Q. I noticed on the other side, "S. R. R. D. B."

A. That is Standard R, Red Dog, Bleached. This is a low grade flour, and this is the red dog that is taken out of the flour, and put together, to show the difference.

Mr. Scarritt: I will have that marked Claimant's Exhibit 252.

(Which was accordingly done.)

Q. I hand you another glass panel, and ask you what that is?

A. It is the same flour, separated the same way, only unbleached; low grade, unbleached.

Q. Low grade unbleached? A. Yes, sir.

Mr. Scarritt: I will have that marked Exhibit 353.

(Which was accordingly done.)

Q. I hand you a third one, and ask you what that is?

A. This is red dog taken out of the bleached, and that is red dog taken out of the unbleached, and put together, to show the difference, that bleaching does not benefit it.

Mr. Scarritt: I will have that marked as an exhibit.

(Marked as Exhibit 254 by the reporter.)

1896 Mr. Butler: I move to strike out his answer, that bleaching does not benefit it.

The Court: That may be stricken out.

By Mr. Scarritt:

Q. What does that "S. R." mean?

A. Standard R. Bleached. Standard represents our grade.

Q. "R" represents the grade?

A. That is our private mark, and this is a standard sample.

Q. How did you make that test? How did you make that sample?

A. With a hand sieve, covered with a silk bolting cloth, and took it and whatever went through the cloth, is this one, and what refused to go through is that one (indicating).

Q. And then what did you do?

A. Put it on this glass, and dipped it in water.

Q. Is that the bleached or the unbleached?

A. That is the bleached.

Q. Which is the lower, and which is the higher grade of flour?

[Q]. This is the highest grade of the two, and that is the lowest, that is the Red Dog.

Q. No. 1, on the 252 is the higher grade of flour, and No. 2 is the lower grade, and they both went through the same process of bleaching, did they? A. Yes, sir.

Q. And to the same extent?

A. Went through at the same time.

Q. And that was in an attempt to make the two look alike —bleach out alike? A. Yes, sir.

Q. Is the same thing true with reference to 253? A. Yes.

Q. The higher grade is marked No. 1, on 253, and the lower grade is marked with a 2?

A. No, you misunderstand me. This product is taken out of this. That is a standard sample, showing that that kind of stuff, there, is in this.

Mr. Butler: Wait a moment Mr. Dunn. We object to you stating what they show. You should identify them,
1897 and tell what they are.

By Mr. Scarritt:

Q. Tell what these are.

A. That is a standard sample of unbleached flour. This is the red dog, that is sieved out of that flour by hand sieve. It was originally one flour, bleached as one.

Q. Bleached flour? A. Yes, sir.

Q. And the darker part shows the darkness that was in—that is, No. 2 shows the darkness that was in No. 1 and 2 together? A. Yes, sir.

Q. That is right, isn't it? A. Yes, sir.

Q. And in this one that we have just had marked 252, No. 2 shows the darker product that was in No. 1 and 2 together?

A. Yes, sir.

Q. Now, is the same true with reference to No. 254?

A. No. 254 come from No. 252.

Q. No. 254 came from No. 252?

A. Yes, sir. No, no. This one (indicating); No. 2.

Q. No. 2 of 254, came from 252,—it is the composition of one and two, in 252? A. Yes.

Q. And what is the No. 1?

A. Composition of this one (indicating).

Q. It is the composition of 1 and 2, in No. 253?

A. Yes.

Q. Now, what does that indicate? In other words, the coloring matter, or the coloring of these respective samples shows what was in the previous samples, don't they?

A. Yes, sir.

Mr. Scarritt: I offer these in evidence.

Q. As I understand it, they show the difference in the grade of bleaching of lower and higher grades of the same flour?

A. Yes, sir.

Q. Now, Mr. Dunn, you saw that flour, before bleaching, didn't you—the samples of which you have here?

A. Yes, sir.

Q. I will get you to state if the impurities or darkness
1898 of color in the flour were more apparent after bleaching, than before? A. Sure.

Q. Is it possible to bleach a lower grade of flour, with the impurities that are ordinarily in the lower grade of flour, so as to make it look like a flour of higher grade, that is unbleached? A. No, sir.

Mr. Butler: That is objected to as repetition.

The Court: He has given his answer. Now, let us get at something else, now.

By Mr. Scarritt:

Q. If there occurs in any grade of flour, a defect or impurities, what effect will the bleaching process have on that flour, with respect to revealing those defects or impurities?

A. It don't change it any.

Q. It don't change the defects or impurities, with reference to seeing them? A. That brings them out plainer.

Mr. Butler: Objected to as leading.

By Mr. Scarritt:

Q. How is that? A. It brings them out plainer.

The Court: That is self evident and plain enough, if you don't bleach a defect, and you do bleach the other, you have got the contrast.

By Mr. Scarritt:

Q. Is the yellow color in the ordinary hard winter wheat, a disqualification in that flour, or a defect in it?

A. I do not grind it.

The Court: What?

A. I don't grind hard wheat; I grind soft.

The Court: He did not ask you that. He did not ask you what you ground. Read him the question.

(Last question read.)

The Court: Say yes or no, or that you don't know.

1899 By Mr. Scarritt:

Q. Is it, in any wheat?

A. Well, the only thing is, the color is a detriment.

Q. And this bleaching process removes the color?

A. Yes, sir.

Cross-Examination

By Mr. Butler:

Q. Does bleaching make the bread sweeter, Mr. Dunn?

A. I don't know.

Q. Never tried the bread?

A. I have eaten bleached bread for quite a while.

Q. Is it sweeter? A. I could not tell you.

Q. Can the color be controlled by milling methods?

A. To a certain extent, yes, sir.

Q. Can you save 10 per cent of your oil, and 10 per cent of your fuel, by using the Alsop bleacher?

A. Well, if I had to mill that flour up to what the Alsop bleacher would put it, I would say about 30 per cent of power.

Q. 30 per cent? Do you sell "Red Dog" as a commercial flour? A. Yes, sir.

Q. As a commercial flour? A. Yes, sir.

Q. Under what brand?

A. Nearly always brand the private brand "R".

The Court: What?

A. "R".

By Mr. Butler:

Q. Is that brand for "Red Dog"? A. Yes, sir.

Q. You brand Red Dog "R", for its initial?
A. I don't know whether that is it or not.
Q. Were all of these flours you brought in here prepared in the ordinary way?
A. They are the standard grade, yes, sir.
Q. But you sieved them by hand?
A. It was made in the mill, in the regular way.
Q. Do you sieve it by hand, in the regular way, in the mill?
A. I always separated it by hand, that way.
1900 Q. So, these flours you brought in here are not in the same shape you send them out?
A. That one (indicating) is marked standard.
Q. And the rest is different?
A. The only difference is they have been separated, and part of the separation is here, and part of it ain't.
Q. That is all made from soft wheat flour?
A. As near as I can tell, yes, sir.
Q. Who got you to make these up?
A. I made them myself.
Q. Who got you to do it?
A. Well, the fact of the matter is, I have been experimenting a little bit myself, looking around, seeing what I could find out.
Q. Well, did you want to shed some light on this case?
A. Not particularly so; I would rather not have been here.
Q. Who got you to do this? Some gentlemen on the other side?
A. No, I cannot say that; I cannot say that I have been solicited here at all.
Q. Who got you to pick this up, and sieve these out by hand? A. I done it myself.
Q. Well, now, why wasn't that done, here, in Le Flang's mill, where this flour was made that was seized?
A. I could not say.
Q. You think it would be a better comparison with the flour that was seized, to use the same mill, the same milling methods, and the same wheat, [that] it would be to go off to somebody else's mill that you don't know anything about, using a different flour, and a different wheat, and different milling methods? A. I can't tell you about that.
Q. You know the soft wheat is milled differently from hard wheat? A. Yes.
Q. You know it produces a different flour? A. Yes.
Q. You know it produces flour of a different color?
A. Yes.
Q. And texture and quality, and value?
A. Yes, sir, that is right.

Q. You know all that? Now, why did you wet these
1901 things down, before you brought them in here? They are wet, I see. Why did you bring those in here wet?
A. Why did I wet them? So I could see the process.
Q. In dipping it in water, it brings out the difference more?
A. Yes.
Q. So, you went to all this trouble, sieving by hand, in a soft wheat mill, slicking it down, and wetting it up?
A. Only two ounce samples.
Q. Yes, only two ounce samples, and mounting them on glass, and coming in here to show what could be done in your mill, if you worked it right? A. Yes, sir.
Q. But you do not claim that has anything to do with the flour that is seized?
A. Not a thing in the world.
Q. Not a thing in the world? Neither do I. Does bleaching darken flour? A. Low grades.
Q. The flour, or the dirt? A. The dirt.
Q. Darkens the dirt? A. Yes, sir.
Q. Makes the flour lighter, and the dirt darker?
A. Well, if you separate them, that is so, but as a grade, it darkens the grade.
Q. Well, I know, but wherever there is flour—
A. (Interrupting) Whitens it.
Q. So that you have to do some milling in order to do some bleaching? A. Yes, sir, you bet you do.
Q. Have to get some of the dirt out, don't you?
A. Yes, sir, you bet you do.
Q. You cannot save all the oil and the fuel, by the Alsop bleacher, can you? A. No, sir.
Q. You have to mill some, don't you? A. You bet.

Witness Excused.

1902 E. D. Lyle, called as a witness on behalf of the claimant, being first duly sworn, was examined and testified as follows:

Direct Examination

By Mr. Scarritt:
Q. What is your name? A. E. D. Lyle.
Q. Where do you live? A. Leavenworth, Kansas.
Q. What is your business? A. Flour milling.
Q. Where is your mill?
A. Leavenworth, Kansas.
Q. Right in town, or near the Fort, or where?
A. Right in the heart of the city.
Q. That is about 20 miles from here?
A. 26 miles north.
Q. What is the capacity of your mill?

A. 1500 barrels.
Q. 24 hours? A. Yes, sir.
Q. Does it run at its full capacity?
A. When we can get the orders.
Q. Ordinarily, what is your output? A. Sir?
Q. What is your usual output?
A. It will run from 300,000 to 400,000 barrels a year.
Q. How long has that mill been established?
A. The mill was built in '82.
Q. 28 years ago? A. Yes, sir.
Q. It was there, then, before you went in business, wasn't it? A. Yes, sir; I was there 20 years ago.
Q. Do you use the Alsop bleacher in your mill?
A. Yes, sir.
Q. How long have you been using that?
A. About four years, I guess.
Q. Do you bleach all the grades of your flour, or just some?
A. Everything but the low grades.
Q. How many grades do you have?
A. Our standard run is four grades.
Q. Do you bleach these four grades for both state and interstate business?
1903 A. The three higher grades; not the low grades.
Q. You mark your sacks, "Bleached" for your state trade?
A. What is sold in the state of Kansas.
Q. How has your trade been? Did you mark them bleached before the law of Kansas required them to be marked "bleached"? A. No, sir.
Q. Did you bleach your flour before that time?
A. Yes, sir.
Q. What has been the effect of that, on your trade? Has it hurt your trade any to mark "bleached"?

Mr. Butler: I object to that as irrelevant and immaterial.

The Court: Objection sustained.

By Mr. Scarritt:
Q. What has been the output of your mill, before and after that time? Has it been larger or smaller?
A. Practically the same.
Q. Practically the same? What effect, if you can tell the jury, does the bleaching have upon the flour, with respect to aging it?
A. It has the same effect that three or four months' bleaching would, on new wheat.
Q. When you say three or four months' bleaching on new wheat—
A. Or aging, I should say.

Q. You mean aging by natural processes?

A. By natural processes, yes, sir.

Q. Now, as I understand, if you take flour from new wheat, and lay it aside for three or four months, it will naturally age, as you millers call it?

A. Yes, sir, dry out.

Q. And this process has the same effect on the new wheat, when ground?

A. Yes, sir. It whitens and dries it.

Q. Does it affect its quality and strength in any degree, that you can, in your experience, observe?

A. I never have been able to find any detriment to the flour from bleaching.

1904 Q. That is, from the Alsop bleaching?

A. Yes, sir.

Q. Distinguish, please, between the Alsop bleaching—call it the artificial bleaching, if you want to, or artificial bleaching, and the other natural bleaching; so we can distinguish between the two. A. All right.

Q. You have said that, if you take new flour and bleach it, that, by the process, it has the same effect as if you take that new flour, and allowed it to age for three or four months?

A. Yes, sir.

Q. Suppose, instead of taking new flour, you should take flour that was older than new flour—take older flour, and grind it, and bleach it by the process, and take the same character of flour, and allow it to age, what would be the comparison?

A. For colors, we have a standard color that we mill to all the time, and we bleach the wheat that we grind, so as to make that color. Some wheat is yellower than others, and requires more bleaching than others, others less.

Q. If I understand you, it is a question of the degree that Nature has already bleached it, as to what application you make of the process.

Mr. Butler: That is objected to as leading; and also it discloses a very great misunderstanding on the part of Judge Scarritt, because the flour does not bleach before the wheat is milled.

The Court: Without reference to that, it is leading.

A. Old wheat will make whiter flour than new wheat.

By Mr. Scarritt:

Q. And, therefore, it has bleached to that extent, before it is milled? A. Yes, sir.

Q. And, when you apply the Alsop process, and bleach it, you bleach it up to the standard? A. Yes, sir.

Q. And, when you apply the Alsop process to your new wheat you bleach it to the standard?

. Yes, sir.

1905 Q. Now, does that have any different effect, in either case? A. Simply a matter of the gas you use.

Q. Upon the quality and strength of the flour?

A. No, sir.

Q. Have you made any bread from this bleached flour, or had any made?

A. I have been eating it on my table, ever since I have been bleaching it.

Q. Is it a rancid bread? A. No.

Q. Sour bread? A. No.

Q. Got yellow balls in it? A. No, sir.

Q. Has it got the yellow accumulation, of dirty, nasty stuff that has been secreted in the corners of your pipes, and your agitator, and other places? A. No. We make good flour.

Q. There is nothing of that kind in there? A. No, sir.

Q. Have you had occasion to change your pipes in your mill since you put it up?

A. Yes. We remodeled last year, and took the bleachers—

Q. (Interrupting) How long had they been in there before that time? A. Approximately three years or more.

Q. Had they been eaten out by gas?

A. No, sir. We put them back and re-used them, just the same.

Q. Had they been busted by the pressure of the gas upon the pipe? A. No, sir.

Q. Split open? A. No, sir.

Q. Nothing of that kind? A. No, sir.

Q. What is the odor of this bread made from this bleached flour, as compared with the odor of bread made from unbleached flour? A. Never detected any difference.

Q. What is the taste?

A. Never detected any difference.

Q. How is it, as to loaf volume, or quantity?

A. Never detected any difference.

Q. In other words, it sizes, up, just the same as the flour that is bleached by the natural process?

1906 A. I think so.

Q. Can you bleach unsound flour, so as to make it look like sound flour? A. No, sir.

Q. Can you alter the character, the quality, or strength, or defectiveness in a flour, by bleaching it? A. No, sir.

Cross-Examination

By Mr. Butler:

Q. Are you a miller?

A. Proprietor. Not the operating miller.

Q. Are you a miller by trade? A. No, sir.
Q. There is a trade known as that of a miller?
A. Yes, sir.
Q. And you are not a miller? A. No, sir.
Q. You do not follow the trade of milling? A. No, sir.
Q. Is your office in the mill?
A. In the mill building, yes, sir. It is all connected.
Q. In the mill building? A. All connected.
Q. How many grades of flour do you make?
A. Make four grades.
Q. Name them, and give the percentage of each.
A. "Gilt Edge", 50 per cent.
Q. Patent? A. What is a patent?
Q. Is this a patent flour?
A. What do you call—what do you call a patent flour?

The Court: Now, it isn't for you to sit here and argue the case.

By Mr. Butler:
Q. Is it a patent? A. It is a middling flour.
Q. It is a patent? A. Patent is a misnomer.

Mr. Butler: I ask the Court to direct the witness to answer that or say he cannot.

The Court: You must answer the question, or say you cannot.

A. Well, there is no such a thing as a patent. The patent has application to the process of the reel system. All flour made by that system was originally—

1907 The Court: (Interrupting) Now, we are not asking you for lecture upon this. Now, please answer the question.

By Mr. Butler:
Q. Go on and tell your percentages.
A. Well, 50 per cent.
Q. All of them? A. Sir?
Q. You said you made four grades, and I want the per cent of each.
A. You will get them. The first grade, "Gilt Edge", 60 per cent, the next thing is a 95 per cent, called "Sunflower."
Q. Is that a straight? A. 95 per cent.
Q. Is it a straight flour? A. No, sir.
Q. Go on; what is your next grade?
A. The next grade is "Golden Age", a 35 per cent clear.
Q. What is a clear? A. What say?
Q. What is a clear?
A. A clear is flour that is specky, that hasn't all the impurities removed.

Q. Not all the flour content of the wheat? A. Sir?
Q. It is not the whole flour content of the wheat from which it is made, then—the clear? A. No, sir.
Q. What is the other part called, in the milling business?
A. The top.
Q. Isn't it called a "patent", Mr. Lyle, by the trade?
A. By some millers it is.
Q. Isn't it generally known in the markets of the world, the market of Leavenworth, the market of Kansas City, that a clear is that portion of the flour that is made after the patent has been taken off? A. The clear?
Q. Yes.
A. No; that would not be a good definition of it. There is low grade, below the clear.
Q. Isn't a patent flour well known? Isn't the phrase "Patent flour" commonly used?
A. Commonly used, yes.
1908 Q. Did you ever see on a sack the words "Top Grade", in your life? A. Yes.
Q. What sack? What brand?
A. I do not know. Somebody makes a "Top Notch" brand.
Q. You think that means the same as patent?
A. I don't know what it means.
Q. You don't know what "Patent" means, do you?
A. Sir?
Q. You don't know what patent means, do you?
A. I know what it means—what it has been used to imply.
Q. What has it been used to imply?
A. The higest grade of flour that millers make.
Q. Do you make a patent?
A. We make a socalled patent, yes, sir.
Q. What did you mean, then, when you declined to answer, when I asked you whether you made a patent flour or not?
A. Well, we don't brand our flour "patent"; we simply use the mill brand on it.
Q. Did you ever brand it "patent"—any of your flour?
A. Yes, we brand it whatever they want it.
Q. Did you ever brand your flour "a patent flour".
A. Yes, sir.
Q. When?
A. Oh, within the last—up to within a year ago.
Q. When did you quit? A. About a year ago.
Q. Why did you quit?
A. Because we considered "patent" was a misnomer.
Q. Because you wanted to avoid the charge of misbranding, wasn't it. A. No, sir.

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

By Mr. Butler:

Q. Wasn't that since the order of the Secretary of Agriculture, denouncing bleaching by NO2 gas?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial, and improper.

1909 The Court: He may answer when he did so.

Mr. Butler: I will withdraw the form of the question.

Q. You remember the time of the order of the Secretary of Agriculture, determining that bleaching by NO2 gas was adulteration within the meaning of the pure food act, don't you?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial, and improper.

The Court: He may answer.

A. The order did not have anything to do with NO2 gas.

By Mr. Butler:

Q. It had, with nitrogen peroxide, didn't it?

A. What did you say?

Q. It had nitrogen peroxide gas, didn't it?

A. I don't remember.

Q. Well, you remember the order I refer to?

A. Yes, sir.

Q. You quit labeling your flour "patent" after that order, didn't you? A. Yes, sir.

Q. And because of that order, didn't you?

A. No, not necessarily.

Q. No, but in fact. A. No.

Q. How do you fix your standard of color? Have you the same standard of color, for all four grades, or a different standard for each?

A. We have a type sample of each grade, that we keep, and maintain as a color standard.

Q. What is the standard for your higher grades—standard of color?

A. If I had a sample here I would show you.

Q. How did you make it? A. Out of wheat.

Q. When? A. I can't tell you now.

Q. How long have you used it? How many years?

A. Why, we try to maintain one color all times.

Q. How many years have you maintained the same standard of color for your highest grades?

A. Well, we have been making that grade for about 28 years. We have aimed to maintain that color all the
1910 time.

Q. And you have something fixed to indicate the color, as a basis of comparison?

A. Yes. We have a standard sample.

Q. When did you fix up the standard now in use?

A. I could not tell you.

Q. Did you change the standard of color when you began to bleach? A. Yes.

Q. When did you begin to bleach?

A. About four years ago.

Q. By what process? A. The Alsop.

Q. Did you ever use another? A. No.

Q. Any other process? A. No.

Q. Did you ever have any other in your mill? A. No.

Q. So, you fixed all standards, a standard of color for each of your four grades, when you began to bleach, or about that time?

A. Yes. That is, with the exception of the low grade. We do not bleach that. We do not try to keep any color with that.

Q. Never bleached the low grades? A. Never.

Q. None of them? A. We bleach not the low grades.

Q. What is the per cent of your low grade?

A. Five per cent.

Q. That is a red dog, isn't it?

A. No, we do not term it a red dog.

Q. No matter what you term it, it is, in fact, what is known generally by many millers as "Red Dog", isn't it?

A. Oh, we sell it as low grade. We do not sell it as "Red Dog."

Q. So, when this bleaching process came in, you gentlemen got together and fixed up a standard of color for each of your three grades, and have maintained it ever since?

A. As near as possible.

Q. All seasons of the year? A. As near as possible.

Q. And one year with another? A. As near as possible.

Q. So, it does not make any difference what kind of wheat comes in, whether it is new wheat or old wheat, or what kind of wheat it is made out of, the Alsop bleacher matches it up with the standard, don't it?

1911 A. That is what we endeavor to do.

Q. And that is what you call natural aging?

A. What did you say?

Q. That is what you call natural aging? A. No.

Q. Isn't that natural aging?

A. Not with the Alsop bleacher, isn't natural aging.

Q. Did natural aging have anything to do with the colors that you fixed for each of these three kinds of flour?

A. All flour, after it has aged for several months, gets whiter than it is when it is freshly ground.

Mr. Butler: I move to strike that out.

The Court: It is stricken out.

By Mr. Butler:

Q. Answer the question.

A. State the question again, please.

(Last question read by the reporter.)

A. The standard of color?

Q. Does natural aging have anything to do with that?

A. No.

Q. You adopted a standard which you thought would make an attractive color for each particular grade of flour, didn't you?

A. We improved the color of the flour by the use of the bleacher.

Mr. Butler: I move to strike out the answer is not responsive.

The Court: It is not responsive. [And] the question, Mr. witness.

A. Read the question.

(Last question read by the reporter.)

A. Yes. We tried to improve the color with bleaching.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: Now, that is not an answer to the question. Why don't you answer the question, and let us get along. Read the question.

(Last question read.)

A. Yes.

1912 By Mr. Butler:

Q. That was an arbitrary color which you follow out, suitable to the particular grade of flour?

A. Well, we had to experiment, to find out what the bleacher would do.

Mr. Butler: I move to strike that out.

The Court: Oh, yes. Why don't you pay attention to the question? You don't fix your mind on what he is asking you.

A. State the question again, Mr. Reporter.

(Last question read by the reporter.)

A. Yes.

By Mr. Butler:

Q. In each case? A. Yes.

Q. And for four years, by means of bleaching, you have been bringing each grade of flour to that arbitrary standard, haven't you? A. We have attempted to.

Q. And have succeeded very well, haven't you, as a practical matter?

A. It is hard to get one crop to make the same color that the other does.

Mr. Butler: I move to strike out his answer as not responsive.

The Court: Ask the question over. I do wish, Mr. Witness, you would listen to what is being asked you.

(Last question read.)

Mr. Scarritt: We object to that as a mere argument, if your Honor please.

The Court: He may answer.

A. Yes, sir.

Q. Did you ever have an American bleacher in any mill that you were connected with?

A. We have the American bleacher now, as well as the Alsop machine.

Q. Did I misunderstand you, when I first asked you whether you had ever had any other bleaching system?

A. We consider them the same machine.

1913 Q. Oh, you consider the American the same as the Alsop? A. Yes.

Q. You have two, then? A. Yes.

Q. One the Alsop patent, and one the American patent?

A. Yes.

Q. Use both of them? A. Yes.

Q. Use both on each grade to get it to each arbitrary standard of color?

A. No; we just use them both when it is necessary.

Q. Use them indifferently, on each grade?

A. The miller has to be the judge of that.

Mr. Butler: I move to strike that out as not responsive.

The Court: That is not an answer.

(Last question read.)

A. I don't operate the bleachers, myself.

By Mr. Butler:

Q. You don't know? Is that it? A. What do you say?

Q. You don't know? A. No.

Q. You cannot answer my question, for lack of knowledge? Is that the reason you do not answer?

A. I do not know how the application of the gas of the two machines is applied to the mill, because I don't operate that.

Q. What kind of pipes are used to conduct the gas from the American? A. Galvanized iron.

Q. The same as from the other? A. Yes.

Q. Are you aware that both employ nitric acid, or NO2 gas, which combines in the pipe, and forms nitric acid?

A. Never understood that.

Q. You never understood that? A. No.

Q. You don't know about that? Is that what you intend to imply?

A. I have never understood that either one of the machines generate nitric acid.

Q. Did you understand that it generates NO2 gas?

A. I have been informed they did.

Q. You understand that, when it comes in contact with
1914 moisture, makes nitric acid?

A. No, I don't know that it does.

Q. You never understood that? You never studied chemistry? A. Only in a casual way.

Q. You know, don't you, that nitrogen peroxide, in water, makes nitric acid? Have you a slicker with you?

A. No, sir.

Q. Every miller carries a slicker, don't he?

A. I do, when I have a vest on.

Q. Did you ever look to see whether there was anything accumulating in your pipes, from the action of the acids in the pipes? A. No.

Q. How is that? A. No.

Q. Ever take any steps to keep it out of the flour? Did you ever see any substance like that (referring to exhibit) in your pipes, over there? A. No.

Q. Ever look for it? A. No.

Q. Ever know it accumulated there? A. No.

Q. Do you know that it does not?

A. No. I don't know anything about it.

Q. Do you know how often your miller cleans out your pipes, to get rid of that sort of stuff—the nitrite of iron?

A. No, sir.

Q. Do you know how often he cleans out the agitator, to get rid of the yellow, overbleached flour?

A. I never heard of it being cleaned out.

Q. You never gave any instructions to have it cleaned out?

A. No, sir.

Q. Were you in Court when Dr. John A. Wesner testified?

A. No, sir.

Q. Do you have a packing bin—a bin for the packing, or do you know about that? A. Yes, we have a small hopper.

Q. Did you ever smell the bleaching gas?

A. No, sir. That is, I have smelled it at the machine.

1915 Q. At what machine? American or Alsop?

A. Both.

Q. At both the American and the Alsop? Smell the same thing? A. Yes, sir.

Q. Nitrogen peroxide gas?

A. I don't know what the gas was.

Q. Did you ever observe the yellow, sulphur colored flour on the bins over the packer?

A. We do not have any bins over the packer. Just a small hopper.

Q. In the hoppers? A. No.

Q. Never looked for it? A. No.

Q. Do you know whether it accumulates there or not?

A. No.

Q. So, you don't know much about that mill, do you?

A. I think I do.

Q. Well, do you say that you don't know whether or not 500 minutes of exposure of flour, condensing on the walls of your agitator and other places, will turn it yellow, like sulphur? Do you say you don't know that?

A. No, I do not know.

Q. Did you ever observe it? A. No.

Q. Does this gas smell, throughout the mill? A. No.

Q. Does it smell where you pack it?

A. No, sir, I have never detected it there.

Q. Did you ever look for it there, where it came out of the agitator? A. No.

Q. Never looked for it there?

A. You say out of the agitator or packer?

Q. Where the flour comes out of the agitator.

A. Oh, no; it is boxed up tight.

Q. Well, where it comes out of it, into the sack, did you ever look for it there?

A. I have been around the packer, but I never detected it.

Q. Never detected any odor? A. No.

Q. So, you swear it is odorless, where the flour runs into the sack, after being passed through the bleaching agitator, do you? A. I would not say that, no.

Q. Why won't you say that.

1916 A. Because I don't know whether the flour has any odor, or hasn't.

Q. I mean, hasn't it the odor of this bleaching gas?

A. I don't know.

Q. In the sack, right after it comes out, and when it is freshly sacked? Do you know that, in opening the sack, there is the odor of that bleaching gas?

A. There may be.

Q. Don't you know that in the car, where the sacks are, everywhere, will be the odor of that bleaching gas?

A. No, sir.

Q. Do you know that it is not?

A. I have been in them, and I have never detected it.

Q. Have you become accustomed to the smell of this gas?

A. I think I can detect it when I come in contact with the odor strong enough.

Q. Now, did you ever hear the phrase "natural bleaching" until this lawsuit commenced? A. I guess so.

Q. Natural bleaching? A. Yes.

Q. Where?

A. In shipping flour abroad, flour gets—

Q. (Interrupting) Who used the phrase? No matter what happened to the flour, I am after the word now, "natural bleaching". Did you ever hear that before the Alsop process was invented? A. Yes, sir.

Q. As distinguished from what kind of bleaching?

A. I don't think that I ever knew anything about the bleaching until the Alsop process came up.

Q. Now, how much natural aging is your bleaching the equivalent of on your highest grade?

A. Oh, I should judge about three months.

[A]. And your next highest grade?

A. Probably the same?

Q. And your next highest grade?

A. Why, I should judge about the same.

Q. How did you get at that?

A. Well, flour—we keep samples of flour around the

1917 place, and you can notice, in old samples, after they become any place from one to four months old, you can notice a very great difference in the color.

Q. Did you ever hear of any natural aging that would bring flour of three different grades to a standard for each, for four consecutive years, without regard to season of the year, or the condition of the crops? A. No.

Q. Then, when you bleach it to bring it to each of the three grades, to an arbitrary standard, you are artificially treating that flour, and changing it chemically, to an arbitrary standard, aren't you?

Mr. Scarritt: We object to that, as incompetent, irrelevant and immaterial, and an improper hypothetical question, not having anything to do with the issues in this case, and an argument of counsel to the witness, and invading the province of the jury.

The Court: He may answer.

Q. Well, now, there is—where the—I don't know how to answer that. There are two things in one, there. No.

By Mr. Butler:

Q. You say there are not?

A. I say there were two questions. I said no.

Q. You answered negatively, did you not? A. Yes.

Q. How can you answer that question negatively, when you say you fixed, four years ago, an arbitrary standard of color for each grade, without regard to crop conditions, whether the wheat was new or old, or the kind of wheat used, you took an Alsop bleacher and brought it to that standard of color. How can you say that you are not chemically bringing the condition of that flour to an arbitrary standard?

Mr. Scarritt: Same objection.

The Court: He may answer.

A. Because I do not think we are having any chemical effect on the flour, because it don't show up in tests of the baking.

1918 By Mr. Butler:

Q. Oh, you think there is no chemical change worked in the flour? A. A very imperceptible one.

Q. As to the color, then, are you not, by chemical action, bringing it to an arbitrary standard, whatever the changes are, whether it is in the gluten, or the starch, or the color, or wherever it is, haven't you set a mark, and by chemicals, brought your flour up to that mark?

A. No, not by chemicals.

Q. Well, by an Alsop bleacher, then?

A. Well, an Alsop—not by the Alsop, either. We dry the flour, and that whitens it.

Q. Oh, you dry it, do you? The Alsop dries it?

A. Yes, sir, sure.

Q. Are you aware the patent says it adds water to it?

A. No, I do not know that.

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

By Mr. Butler:

Q. Don't you know that?

A. I don't know anything about the wording of the patent.

Q. How much does it dry it?

A. It evaporates some moisture from it.

Q. Would hot air do the same?

A. To a certain extent, yes.

Q. Then, why don't you use hot air, instead of NO2 gas to dry it with?

A. We probably will, if the Government shuts us off from using the Alsop.

Q. Why haven't you done that, and saved the cost of these machines?

A. We did not know it before.

Q. Didn't know that? You are a mill manager, and don't know that hot air would dry out one tenth of one per cent of the moisture content of flour? You don't know that?

A. Yes, but it would cost too much to dry it.

Q. So, you thought you would purify it by electricity? Is that it? Do you call this "purified air" up there?

1919 A. Do we call it what?

Q. "Purified air"? Do you call it that?

A. Why, no, that ain't the term.

Q. Electrified? A. No.

Q. Modified? A. No.

Q. Or do they call it NO2 gas, up to your mill?

A. We just call it an Alsop bleacher.

Q. Does this bleaching increase the gluten and food value?

A. No, not that I know of.

Q. You are aware that the patent says it doubles the gluten, are you not?

A. No. I do not know anything about the wording of the patent.

Q. What is the fact about that? The patent does so state. That is in it. Now, is that true or not?

A. I don't know.

Q. You don't know about that? A. No.

Q. Now, you don't know anything about the effect of this bleaching process, except that it will bring the color of each flour to the arbitrary standard of each of the three grades that you have heretofore referred to?

A. That is what we do it for.

Q. And that is all you do it for? A. Yes, sir.

Q. Yes, sir. And this talking about natural aging, to its natural arbitrary standard, is a humbug, pure and simple, in your judgment, isn't it? A. No.

Mr. Scarritt: We object to that.

The Court: Sustained.

By Mr. Butler:

Q. Do you believe that there is any natural aging, for four years, to an arbitrary standard to each grade of flour, without regard to season, crop conditions, or the kind of wheat?

A. What do you call an "arbitrary standard"?

Q. The standard that you fix for each grade of your flour.

A. What does he say?

1920 (Last question read by the reporter.)

A. No, it won't. There isn't any natural aging for four years. Now, that is for four consecutive years.

By Mr. Butler:

Q. Now, is it not well known among the bleachers, that there is a process known as the "Alsop process", and another known as the "American process", and another known as the "Williams process"? A. Yes.

Q. And is not the American process, when spoken of commonly among millers, distinguished by the name "American"?

A. That is, the two machines are distinguished, but I guess it is pretty generally conceded that their work is practically the same.

Q. When I asked you if you did not use some other process, and you said you did not, did you not intend to conceal from me, and this jury, the fact that you used the American and the Alsop both? A. No.

Q. Then, why didn't you say, that you used the American, because that is as well known as the Alsop by name, among millers, isn't it, and is entirely different from the Alsop, isn't it?

A. Well, the companies were absorbed some time ago.

Q. When? A. I don't know how long.

Q. Which one did you get first? A. Sir?

Q. Which one did you get first?

A. We had the American first.

Q. When you got the American, it was not known as an Alsop, was it? A. No.

Q. But it was not known as the Alsop process when you got it? It was since then that Alsop claimed a monopoly on the gas used, and drove the American to sell out to it, wasn't it?

A. It was known as the Bradley-Lovejoy patent. I believe that is the patent they operated under.

Q. Now, then, why is it, when I asked you if you did not use some other process, that you denied it?

A. Well, I considered the two just the same.

Q. Considered the two just the same? A. Yes.

1921 Q. When you bought one from Bradley, or the American Company, and used it for some time?

A. American Milling & Purifying Company.

Q. And then the Alsop Company came in and sold you another?

A. No; we enlarged our mill, and bought another one, and we bought it from the Alsop Company.

Q. Who brought you here? Did you come here as a volunteer? A. No, sir.

Q. Are you contributing to the defense? A. Yes, sir.

Q. Why didn't you send your miller, who knows about the milling process, instead of coming yourself?

A. He is up in the German Hospital.

Q. He is sick? That is the only reason, is it not?

A. He would be here, if wanted, and could be.

Q. We would like to have him, and ask him whether or not he could smell the gas, or whether he cleans out his pipes, or not.

A. If you want to subpoena him, get Dr. Froehling to let him come down.

Witness excused.

(Court thereupon adjourned, to meet again at ten o'clock a. m., Monday, June 27th, 1910.)

1922 Morning Session.

Kansas City, Missouri, Monday, June 27, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

George L. Teller, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Q. Professor, please state your full name.

A. George L. Teller.

Q. And your profession? A. Chemist.

Q. Will you please state your qualifications and your residence—where do you live?

A. Riverside, Illinois. I have been a chemist for the past twenty-two years. I have been assistant to Dr. Kedzie who has made a special study of wheat at the Michigan Agricultural College for two years. I was chemist to the Arkansas agricultural experiment station for over nine years, where I made a special study of wheats and flours and all matters pertaining to them. I was two years or three years chemist of the Chidlow

Institute in Chicago, where my work was entirely with flours, and I have for the remainder of the time been connected with the Columbus Laboratory. Previous to this time I graduated from the Michigan Agricultural College with the degree of B. S., and later on granted the title of M. S. from the same institution.

Q. I will ask you, professor, have you been accustomed to making analyses of foods and grains of various kinds, including wheat and flour, and similar articles?

A. I have made a great number of such analyses.

Q. How long have you been engaged in such work?

A. For twenty years or twenty-two years.

Q. Has your work been specialized along any particular line, and if so, what?

1923 A. Perhaps more especially along wheats and flours, than along any other line.

Q. Does your work in connection with flours involve the examination and analysis of samples of flours of various kinds?

A. It does. We receive a great many samples of flour from all parts of the United States, China, Europe, and other places, including all classes of wheats that are grown in these different countries.

Q. Have you done any work with bleached flour, and if so, to what extent?

A. I have done a great deal of work with bleached flour from the receipt of the first sample of bleached flour in this country it is known from Ireland, I think it was, up to the present time, I have made a special study of that subject.

Q. Are you familiar with the Alsop process and with flour bleached by that process? A. I am.

Q. How many samples of bleached flour, roughly speaking, would you say you have examined? A. Several thousand.

Q. Have you made any tests on bleached to ascertain if any damage of any kind was done to it, and if, so state fully what you have done.

A. I have made very thorough tests on the samples. The first sample of bleached flour which I received was very carefully analyzed in comparison with the unbleached flours, and I have made repeated analyses of bleached and unbleached flours since to determine the bread making qualities and any changes that might be brought about in the commercial value of the flour, and also changes that might be brought about in the chemical value of the flour, chemical constituents of the flour.

Q. I will ask you if this work was done in the regular line of business in ascertaining the commercial value of flour?

A. A large part of it has been; other parts have been for the purpose of arriving at the truth of the problem concerning

bleaching, including the first sample which I examined which it was my purpose to set before the millers of the country that they might know more of the nature and the character of the bleaching process.

1924 Q. Have you been accustomed during the past five or six years to receive samples of bleached and unbleached flour from millers and bakers for the purpose of comparing their strength, purity, baking qualities, and other characteristics? A. I have.

Q. And have you, as a matter of fact, made careful, scientific comparisons of such samples?

A. I have made a great many such comparisons.

Q. Now, I will ask you, Professor Teller, as a result of all your work on commercial bleached flour have you found any of such flour to be injured in any way by the bleaching process?

A. I do not know of a single sample which I have examined, commercial bleached flour, that has been in any way injured or contained anything that injured the flour that could be attributed to the bleaching process.

Q. Yes, sir. Now, I want to ask you especially as to the gluten contained and as to the strength, quality and elasticity of the gluten in such samples of bleached flour as you have examined, compared with the same flour unbleached, have you ever noticed that these qualities of the gluten have been injured in any way?

A. I have never found any injury to the gluten in this way at all, change in the amount of gluten or in injury to its quality that could be detected either in bread making or other lines.

Q. I will ask you if you have ever noticed any foreign odor or unpleasant swell produced in flour by the commercial bleaching of it?

A. I have never noticed any odor that was retained by the flour after it left the mill. There is always a peculiar odor accompanying the bleaching of flour which is characteristic of the re-action apparently, that takes place in this bleaching process, but it is very fleeting, and possibly is accompanied with the property of a part of the products of the bleaching.

Q. Now, as to the starch, what would you say as to the starch content?

A. There is no alteration in the starch content of the flour.

Q. Now, as to any other constituent of flour?

A. There is no alteration in any other constituent of the flour excepting the coloring matter.

1925 Q. And that is changed and made lighter, I understand?

A. That is changed in such a way that the yellow color is no longer apparent.

Q. Now, have you made examinations of bread made from bleached and unbleached flours?

A. I have examined a great number of such samples.

Q. And I will ask you if you have noticed any difference in the odor from the bread made from the two?

A. I have never been able to detect any difference in the odor.

Q. Or of the taste? A. And the taste neither.

Q. Now, how about the color?

A. The color is always lighter for the bleached flour, with commercially bleached flour, than it is with the unbleached flour.

Q. And now as to the relative volume of the loaf volume?

A. Where there has been any difference noted it is in favor of the bleached flour, but differences are so slight that they can in nearly all instances, at least, be attributed to accidental variations in the making of the bread.

Q. Now, I want to ask you this question specifically, that is, if in your judgment, any damage of any kind is done to flour or to any constituent of it, or to the bread made therefrom by reason of bleaching such flour by this Alsop process?

A. In my opinion or in my judgment there is no injury done in that way.

Q. To what extent have you found nitrite re-acting nitrogen in bleached flour?

A. An average of about one part per million of color correponding to the color which is obtained when the Griess re-agent is applied to a nitrite.

Q. Have you found such nitrite re-acting nitrogen in flour that is naturally aged or bleached? A. I have.

Q. How does the amount of nitrite re-acting nitrogen in naturally aged flour compare with that in commercial bleached flour?

A. I have found as high as four times the amount that is present in commercial bleached flour.

By Judge Scarritt:

Q. In what?

A. In the flour that is naturally bleached I have found as high as four times the amount that is present in commercially bleached flour.

1926 By Mr. Elliott:

Q. Is it possible, in your judgment, Professor, by a chemical test to determine if the flour has been naturally bleached or bleached by this Alsop process?

A. I have investigated this matter carefully, and I believe there is no means of determining whether it is bleached by artificial or by the Alsop process, or whether it is bleached by the natural aging in the air, without knowing the history of the sample.

Q. Is there any difference in the chemical re-action between —with Griess—when flour is changed by natural aging and this artificial bleaching?

A. I have never been able to detect any difference.

Q. Now, how have you arrived at this conclusion?

A. By a large number of experiments which have been carried on on bleached flours from mills, on flours which have been bleached at the same time by exposure to air, and by unbleached flour, the same flours unbleached.

Q. Now, you may tell us what you have found?

A. I have taken flour and exposed it to the air of my kitchen and found that it soon lost its color, as we know that flour is continually losing its color and I might say here that one of the greatest difficulties which we have in the laboratory in determining the color value of the flour is to keep the standard constant, that the color is always changing; if you open a can of it and expose it to the air a little while and then take the same flour, tomorrow it becomes lighter, you could not keep the flour constant. Now, I find this same thing to take place when I expose a sample of flour which was unbleached to the air of my kitchen, and then it lost the color; I applied the usual test of determining the amount of nitrites or the color giving material present in it, applying the flour to the Griess test to the extract from the flour, and have found that the color was apparent in this extract the same as it was in the flour which had been bleached by the Alsop process.

Q. To what extent, Professor, are you able to explain the change in flour that occurs by natural aging?

A. The chief change in flour, aside from the losing of the color, the changing of the color, that is to be attributed
1927 to the drying out of the flour, the loss of moisture, it increases the absorption of the flour so that you have to add more water to it if you wish to make it into a dough of the standard stiffness.

Q. To what extent does this nitrite re-acting substance remain in bread that has been bleached by this Alsop process?

A. To a very slight extent, generally, I think the largest amount that I have found in the sample that was bleached by artificial means had three to four-tenths parts per million, and the same flour baked at other times and by little different process, the amount was reduced to nothing.

By Judge Scarritt:

Q. You mean three-tenth of one part?

A. Three-tenths of one part per million. I may add that this was baked by a specially short process for the purpose of using data along those lines and that by bleaching by this—baking by this process, a larger amount of nitrites was left there than ordinary. I took the same flour home and had my wife bake bread from it in the kitchen as she ordinarily bakes bread, and there was no nitrites left in it.

Q. Now, to what extent, if any, have you observed nitrite reacting material to remain in bread made from unbleached flour?

A. There is nearly always, or often, I won't say nearly always, but often a trace of pink produced by applying the Griess[yet to the extreme] from bread made from the unbleached flour.

Q. Now, have you made any examination of the dough of bread before it goes into the oven to ascertain the presence or absence of nitrite material in it?

A. I think I have made examinations of that kind. I have examined the dough that was not to be baked afterwards frequently, and I found that the nitrites were removed through the process of fermentation.

Q. In your judgment do bacteria of the yeast plant feed on this nitrite re-acting material?

A. They do; they can remove from flour in which they are allowed to act upon it. I have made experiments in which I have set yeast and flour which had been bleached in a
1928 soft dough and allowed them to stand together for a time, and the nitrite coloring material was removed, when the same flour and the same yeast were put together in the presence of chloroform which would stop the action and growth of the bacteria in the yeast which were present, the color was turned in the same amount that it was on the unbleached flour, and the same amount that was on the untreated flour dough, that is, flour dough that had no yeast in it.

Q. I will ask you to tell us to what extent, if any, the flavor of bread depends upon the baking and manipulation of the dough and the mixtures put into it, and so forth?

A. My experience in the flavor of the bread is dependent much more upon the method of making it than upon the flour which it put into it; it is possible to alter materially the flavor of bread from any flour by making it by different methods of bread making.

Q. Suppose, for instance, suppose that you had made a loaf of bread from a given flour and some expert baker or other baker here in Kansas City had made a loaf of bread from that same flour, in your judgment these two loaves made from the same flour might differ materially in taste, and so forth; is that correct?

A. They most certainly would; it is the experience of bakers in general that the same flour baked by different bakers will give different flavors.

Mr. Butler: I think I will move to strike out the experience of bakers generally as not responsive and irrelevant.

The Court: Yes, that will be stricken out.

Judge Scarritt: If he knows it as a fact he can state it.

The Court: That would be hearsay, I would think.

By Mr. Elliott:

Q. Well, I will ask you if that is your own experience?

A. That is my own experience on examination of a considerable number of loaves of bread.

Q. I will ask you, Professor, if you have made any experiments to determine whether bleached flour has in any way been affected in digestive value, and if so with what results?

A. I have made a considerable number of experiments to determine whether or not flours which had been
1929 bleached were any less digestible than those which were unbleached, the same flour which is unbleached, and in some cases I have found that the bleached flours were more readily digested, the protein of the bleached flour, both by pancreatic or pepsin. These experiments were made by making bread from the flours which were bleached and which were unbleached.

Q. The same flour?

A. The same flour, and exposing them to the digestive juices at the same temperature and the same amount of digestive juice, watching the process of digestion, making determinations of that digestive proteid, after the process was completed, and determining the amount of digestion from the actual amount of proteid nitrogen recovered or proteid recovered in the solution after digestion.

Q. Now, what do you state is your opinion as the result of those experiments?

A. My opinion is that commercial bleached flour is not materially altered in the digestibility by the process of digestion.

Q. Did you make what has been spoken of here as these nitrogen determinations?

A. Yes, sir, always make those determinations of products of digestion.

Q. What is the difference, Professor, between a hard and a soft winter wheat?

A. The Century dictionary or Webster's New International dictionary defines the soft wheat—

Mr. Butler: I object to the dictionary. We can go to that ourselves without taking up the time of an expert.

The Court: Objection sustained.

A. My experience is the same with the soft winter wheat flour, a one which is relatively rich in starch, I was just going to say that the Century Dictionary outlines that and that I agree with it.

By Mr. Butler:

Q. You are sure the dictionary is right then?

A. I am sure the dictionary is right.

Mr. Butler: So am I in both cases.

The Court: That is a great compliment to the dictionary.

Witness: I find it a very good book.

1930 By Mr. Elliott:

Q. Have you made any comparison, Professor Teller, of the starch content of this flour that has been seized, to ascertain how it compares with the starch content of the standard soft winter wheat flour?

A. It contains a considerable less starch than the soft winter wheat flour, as soft winter wheat flours are recognized in the trade and by myself and by the dictionary. I might add that it contains practically reduced the same moisture content, the same amount of flour, the same amount of starch that a sample of Minneapolis spring wheat flour contained, examined at the same time, there is no difference between the two.

Q. You mean this seized flour? A. This seized flour.

Q. Contained?

A. Contained the same amount of starch when reduced to the same moisture point, which is essential in all cases as a sample from Minneapolis of standard spring wheat flour which is always recognized as a hard wheat flour.

Q. Given a grade of flour containing a certain per cent of impurities in the form of bran, of fiber, I will ask you, in your judgment, and the result of your investigation of flours, which flour will the more readily conceal the presence of those impurities, a flour having a yellowish color, or a flour which has been made whiter by means of this process?

A. I am examining flours daily for color, and have noted, among other things, that it is much more easy to note the presence of the outer portion of the wheat berry in flours which are bleached than in the same flours which are not bleached because the yellow coloring matter assists in covering up these impurities just the same as bleaching assists in covering up the yellow of linen.

Q. I will ask you if you have made any comparisons between bleached and unbleached flours as to the relative acidity? A. I have.

Q. If so with what result?

A. Examined a great many samples of bleached flour for their relative acidity, the flour unbleached and the commercial bleached, and have never been able to detect any increase in acidity.

1931 Q. In the process of bleaching with this Alsop process I will ask you if either nitrous or nitric acids, in your judgment, are added to the flour? A. They are not.

Q. Have you examined the flour that has been seized in this case? A. I have.

Q. Would your answer apply to that flour? A. It would.

Q. If in your judgment, there is neither nitrous nor nitric acid added to the flour, what would be your opinion as to the presence in flour bleached by this Alsop process of nitrites as such or nitrates as such?

A. I think there are none there; there are none there.

Cross-Examination

By Mr. Butler:

Q. Are there any nitrates as such in naturally aged flour?

A. I think there are none.

Q. Are there any nitrites as such in naturally aged flour?

A. It is possible that there may be.

Q. The natural aging adds nitrates to flour?

A. It might possibly come from the air or the nitrites in the air which might possibly come to the flour.

Q. You are a partner of Dr. John A. Wesener?

A. I am associated with him, yes, sir.

Q. You have collaborated with him in experimentation?

A. Much.

Q. He told us the other day that you had pumped out—he authorized it "we"—three thousand stomachs, did you participate in that?

A. Not in that branch of the work, no, sir.

Judge Scarritt: We object to that; the comments on other witnesses' testimony and basing his questions on those comments is highly improper.

The Court: He may answer; he said he had not.

A. Not in that branch of the work.

Q. You had nothing to do with the stomach pumping operations of the Columbus laboratory?

A. I am not connected with that part of the institution.

1932 Q. You prepared the speeches and papers, and other discourses, which he has given, before millers, published in trade journals and before bakers and bakers' associations?

A. I have sometimes collaborated in the preparation of those, yes, sir.

Q. You are familiar with those that he has made as they have been published in the scientific journals, the trade journals, the Bakers' Helper, the Modern Miller, the Northwestern Miller, the American Miller, and the Dixie Miller, you are familiar with all that stuff? A. I am quite familiar.

Q. Agree with it, do you?

A. I think so; I do not recall anything that I disagree with.

Q. Are you the founder of most of them?

A. I don't think that I am.

Q. You are really the doer in that laboratory, the man that does the work? A. I do some work there, yes.

Q. Well, I know, but, now, Professor Teller, we had a visit with Dr. Wesener here the other day?

A. Yes, sir, he told me.

Q. Now, is it overstating it to say that you are the doer, the man who really does the work?

A. I do a great deal of work there, I admit that.

Q. His public matters and the commercial features, and so forth, and his inventions and all that, occupy a large amount of his time and leaves the great bulk of the work for you?

A. A certain part of the work falls to me.

Q. Yes. Now, attention was drawn to when you were studying, your special training, are you a pharmacologist?

A. No, sir.

Q. Physiological chemist?

A. Not specialized in that direction.

Q. Organic chemist?

A. I have made some studies in organic chemistry. I couldn't say that I am an expert along the scientific or the deeper part.

Q. Are you an expert organic chemist?

A. Do a good deal of analytical work in organic chemistry. I am modest, I do not like to say that I am a great man.

1933 Q. I know, we would not hear your enemies say you were not, Professor. I am trying to get at this, not for the purpose of ascertaining about you, but to guide me in my further inquiries. You are an analyist? A. Yes, sir.

Q. But you do not claim to be, as I understand it, a specialist in organic chemistry? A. Some branches of it, yes.

Q. In some branches of it. You are not a toxicologist?

A. No, sir, make no claim in that direction, although I may have some ideas along those lines.

Q. The first bleached flour that you received was from Ireland?

A. I think it was, I am not sure now, but I think that was the origin of it.

Q. That is the Kjeldahl process, was it?

A. I think it was.

Q. It employed NO2 artificially made, did it not?

A. I think there was NO2 in the gas that we submitted to the flour.

Q. I guess I will have to ask you to answer my question just as I put it.

A. Well, then, I couldn't say that, I am not in a position to say that NO2 was an active agent.

Q. I didn't ask you that? A. Beg pardon?

Q. I asked you if it employed NO2?

A. I would interpret the question as the same meaning.

Q. Oh, you would?

A. Yes, sir, that is, if you mean NO2 was the agent which did the work.

Q. I did not mean that, I ask if it was employed in any of the steps of the process? A. NO2 is present there.

Q. Was present in the flour that you received from Ireland? A. I beg pardon, I didn't say in the flour.

Q. I am speaking of the sample you received from Ireland?

A. I didn't say it was present in the flour.

Q. Well, where was it present, then?

A. Probably in the machine that generated the gases.

Q. Yes, I see. Now, we get some things—have you been here before? A. Where?

Q. In this court at the trial? A. No, sir, not before.

1934 Q. Now, there are some things, Professor, we have understood here, I think. A. Yes.

Q. Let's see if you and I can agree upon it. Now, in the first place, it is stated in this patent that nitrogen peroxide gas is used to bleach flour by the Alsop process, is that true?

A. Why, as I remember the patent, it does.

Q. Well, does the patent tell the truth?

A. I am very doubtful about it.

Q. You think it is false?

A. I think there is a mistake there somewhere.

Q. You think there is a mistake there, but you do feel pretty certain that a flaming arc may be used to produce NO2 gas?

A. I am pretty sure that there is NO2 maybe produced from the flaming arc.

Q. All right. Did you ever make any determination of NO2 gas in atmosphere?

A. I don't know that I have of NO2 gas in atmosphere.

Q. No, never tried that?

A. I don't know that I have ever tried to determine NO2 gas from atmosphere.

Q. Now, let us assume that the gas taken out of an Alsop bleacher on analysis shows 1100 parts to the million.

A. Of what?

Q. NO2, to the million of the mixture?

A. It would be the wrong assumption.

Q. It would? A. It would.

Mr. Butler: Well, of course, I move to strike that out as irrelevant and impertinent.

A. I beg pardon, I did not mean to be impertinent, but I mean not in quantity, I was not hinging on quantity, but something else.

Q. Now, I ask you to assume that to be the fact. Now, scientists when they come to court may be questioned by asking them to assume certain facts that the jury may believe to be true. A. All right.

Q. Now, then, I ask you to assume that there is 1100 parts NO2 gas per million in the bleaching medium employed by the Alsop process—nailing that down as the truth.

Judge Scarritt: We object to that because there is no evidence—

The Court: Oh, but hold on, they have a right to assume,
1935 you are not responsible for the assumption, then see what follows.

Judge Scarritt: We object to that; they have not a right to assume something that is not true, that the evidence don't support.

Mr. Butler: Oh, yes, it is proved; we brought it into this house and proved it.

The Court: Well, go on.

To which ruling of the court claimant then and there duly excepted.

Q. As true, now, assume that to be true.

A. I will answer your question with the understanding that I do not acknowledge that assumption.

Q. Oh, that you deny the truth of my assumption, you can deny that with all the force you like. A. All right.

Q. Now, is it in testimony that the Berkeland-Eyde process by which hundreds of thousands of tons of nitric acid are manufactured every year produces NO2 by a flaming arc and passes atmosphere over it, and that the mixture has only 15,000 to the million against 1100 to the million in the Alsop process;

then as a professional gentleman I want to ask you whether or not the flaming arc may be used to manufacture nitric acid?

A. It is used as you state.

Q. It is the cheapest and best nitric acid factory known to science, isn't it?

A. It is supposed to be a very good one.

Q. And in principle, mechanically arranged, there are scientifically comparable, the Alsop process and the Berkeland-Eyde process, in principle.

Counsel for claimant objected to the question.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. The application of the acid brings the market.

Q. One is making nitric acid for sale, and the other is bleaching flour?

A. I don't admit that the nitric acid is bleached in the flour at all.

Q. I know you don't. Are you interested in Brother
1936 John A. Wesener's NOCl patent? A. No, sir.

Q. You know about that, don't you?

A. Well, I have heard of it, yes, sir.

Q. Well, you know about it, don't you?

A. I know pretty well of it, yes.

Q. You helped him invent it, didn't you?

A. I can't say that I did.

Q. You experimented along that line?

A. Yes, sir, I have been working along that line, sir.

Q. And NOCl plus H2O gives hydrochlorid acid and nitrous acid? A. Under certain conditions, yes, sir.

Q. Is NO2 a gas? A. It is.

Q. Is it a poisonous gas? A. I am not a toxicologist.

Q. Is it offensive in smell?

A. If you get enough of it it would not be good to smell.

Q. Offensive?

A. It is if you get enough of it, it would be objectionable.

Q. Yes. A. Lots of other things too.

Mr. Butler: I move to strike out the "lots of other things."

The Court: Yes, that is stricken out.

Q. Is HNO2 poisonous?

A. I am not a toxicologist, I would not be able to answer.

Q. Do you know as a chemist?

A. I heard that it was poisonous, read that it was poisonous; I am not a toxicologist.

Q. It is laid down in the primary books as a poison, isn't it?
A. The books state that it is a poison.
Q. You believe them just as much as you do the dictionary?
A. It is a copy.
Q. I mean a poisonous substance?
A. If you get enough of it, anything is poisonous if you get enough of it.
Q. Is flour poisonous?
A. Yes, if you get enough of it.
Q. A carload is very poisonous?
A. If a man would eat a carload at one time it would kill him.

1937 Mr. Butler: I move to strike that out.

Q. Now, I want to ask you if a carload of wholesome wheat flour is a poisonous substance?
A. If eaten in sufficient quantities.

Mr. Butler: I move to strike that out.

The Court: That is stricken out.

Q. The character of the substance, is it a poisonous substance, a carload of flour?

Judge Scarritt: We object to that as absolutely immaterial in this case.

The Court: The objection is overruled and he may answer.

To which ruling of the court claimant then and there duly excepted.

A. I can only answer that if given in sufficient quantities it would be poisonous.

Mr. Butler: I move to strike out his answer as not responsive.

The Court: Yes.

Q. And ask you whether as a scientific gentleman you can inform this court and jury as an expert, whether a carload of unbleached wholesome flour is a poisonous substance?
A. I cannot answer that question, not without qualification.
Q. You cannot answer it; we will try to get somebody who can. Do you know HNO3? A. Heard of it.
Q. Is a quart of concentrated HNO3 a poisonous substance —a quart? A. Taken by itself.
Q. What is that? A. If taken by itself.
Q. What do you mean "If taken by itself"?
A. Not diluted.

Q. Well, I mean concentrated?
A. Concentrated it is, certainly.
Q. Then HNO2 is a poisonous substance?
A. Concentrated.
Q. Now, if a carload of flour was concentrated, that is, fill the car full, nothing but flour, that is not bleached, is it a poisonous substance? A. That is not a relative comparison.

Mr. Butler: I move to strike out his answer.

The Court: Yes. Answer whether it is poisonous or not.

A. I can't.
1938 Q. Can't tell whether it is poisonous. Is a carload of corn poisonous?
A. I know it is not poisonous, but I cannot answer that it is not poisonous under any conditions.
Q. Is a carload of corn a poisonous substance?
A. Taken in quantity it would be.
Q. Yes, all right. How is this NOC1 shipped out, in what commercial volume does Professor John A. Wesener ship that out to millers to bleach flour?
A. I never kept track of that.
Q. Have you seen the carboys there like the compressed soda water drum? A. I have seen some cylinders, yes.

Judge Scarritt: We object to that as clearly outside of the issues in this case. About nine-tenths of the testimony that has been introduced here is on other things that have no more to do with this flour in question than the man in the moon.

The Court: Objection overruled.

To which ruling of the court claimant then and there duly excepted.

Q. Now, is a whole drum full of nitrosyl chloride a poisonous substance? A. In concentration it is poisonous.
Q. As shipped out is it a poisonous substance?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. In concentration it is poisonous.

Q. It is shipped out in concentration? A. It is.
Q. Then Mr. John A. Wesener ships out poison in concentration in drums to bleach flour with, doesn't he?

A. I don't know whether he does or not; I have not seen him send out any.

Q. You know, don't you, Professor Teller, are you telling this jury that you don't know that he is engaged in that business?

A. Yes, I know he is engaged in the business.

Q. Then you know he is shipping it out?

1939 A. I expect he probably is connected with a concern that is.

Q. And you know every drumful of it is a poisonous substance? A. If taken in quantity.

Q. Well, it is in quantity in a practically concentrated form, and it is poison, isn't it? A. Have it your own way.

Mr. Butler: I move to strike that out.

The Court: That is stricken out.

Q. We will have it the way you say, you can say it is not a poison if you believe that to be the truth, or that it is, if you believe that to be the truth, and if you don't know, say you don't know, I don't care which end of that stick you take.

A. I believe nitrosyl chloride to be poison.

Q. Nitric acid is? A. Sure.

Q. It is commonly known as a poison, isn't it?

A. I expect it is.

Q. You know it is, don't you? A. Sure.

Q. And you know if you go and buy nitric acid at a drug store it will be labeled as a poison? A. Sure.

Q. And you know it is a poison and known to be such?

A. Sure.

Q. You know that, don't you? A. Yes, sir.

Q. Now, then, what is the volume of the coloring matter of Missouri wheat flour compared with the whole volume of the flour, wheat against wheat, or volume against volume, whichever way you prefer to state it?

A. Oh, it must be very small, I couldn't say it was more than one-thousanth of one per cent, I can't tell now, I haven't it in mind.

Q. Give it approximately?

A. Possibly one-thousanth of one per cent.

Q. That is one per cent?

A. One-thousanth of one per cent.

Q. That is one-thousandth, isn't it, of one per cent?

A. Multiplied together it will make one-thousandth of one per cent.

Q. That would make two ciphers up here like that, so then there is one part to one hundred thousand, one part of color to one hundred thousand flour?

1940 A. That would be somewheres near it.

Q. So we will mark down here, so we won't forget it, color one to one hundred thousand; now, that is the truth, isn't it, as near as you can get at it from memory?

A. I think that is about it; it might be overstated.

Q. Will NO2 combine with water?

A. Well, it will enter into a solution of water, makes an acid.

Q. Will it make two acids? A. Make two acids.

Q. Nitrous acid, so then, if we say NO2 plus H2O, we will have HNO2 and HNO3 in equal chemical quantities, will we not?

A. That may be true.

Q. That is true, isn't it?

A. Yes, sir, if there is no other interfering material there.

Q. I don't mean to put in some cheese, or something like that, to make an organic nitrite or nitrate with it.

A. But I wanted to refer to oxygen which is most always present and changes very quickly.

Q. Now, these things are very rapid?

A. Sure they are.

Q. Very rapid, now? A. Yes, sir.

Q. If HNO2 comes into contact with potassium will it form a nitrite of potassium? A. Yes.

Q. Of sodium, a nitrite of sodium? A. Yes.

Q. And calcium, a nitrate of calcium? A. Yes.

Q. Of magnesium, a nitrate of magesium? A. Yes,

Q. And if it comes into contact with organic bases will it make organic nitrites? A. It depends on the base, yes.

Q. Usually, that is, generally the truth, isn't it?

A. Often is.

Q. And as a rule?

A. Not always because there are exceptions to it.

Q. I know, but is the general rule, subject to some exceptions, may we put it that way?

A. I won't say to how many exceptions, or how many there are, as a rule, but then it does both ways.

Q. Will nitric acid if it comes into contact with sodium, potassium, calcium or magnesium make a nitrate of each?

A. Nitrous acid?

1941 Q. Nitric acid.

A. Nitric will make the nitrate, and nitrous will make the nitrite.

Q. And if nitric acid came into contact with organic bases will it make organic nitrates?

A. Yes, if you have it there as nitrous acid or nitric acid.

Q. If you have it there as nitric acid?

A. But may I add, it would be sure to be there as such.

Q. Yes, and if it is there as such, it is a poisonous substances, isn't it?

A. Well, now, that is a peculiar question for a lawyer to ask.

Q. It is a very funny question, it is almost a hypothetical question, but it is so, isn't it, if it is there as such?

A. Will you allow me to give the comparison—

Q. No, I ask you to answer my question.

A. Well, now, I could not answer it because everything in this world is relative.

Q. Everything in this world is relative, and is it because everything in the world is relative that you couldn't tell us whether a carload of wholesome flour is a poisonous substance?

A. Certainly, it is, because if you take it in the right quantity it will be poison.

Q. Can you mention any substance on the face of the earth that is not a poisonous substance if a carload of clean, wholesome flour is a poisonous substance?

A. I don't believe I can mention any substance that would not be poison under certain conditions.

Q. So then our life depends upon poison, we eat it, we drink it, we breathe it, we live amidst poisons? A. Sure.

Q. And that being true you must say, it seems to me, that the bleaching medium made by the Alsop process is a poisonous substance? A. When concentrated it is.

Q. If everything else in the world is poisonous Mr. Alsop has not invented something that is not, has he?

A. I don't believe anyone can.

Q. You agree that strychnine is poisonous?

A. I think it is.

Q. And if we put some in flour do you think we would be adding poison to the flour?

A. I think we would if you put enough of it there.

1942 Q. If we put nitric acid do you think that would be adding poison to the flour?

A. If you put nitric acid there you might add a little poisonous material to flour.

Q. And if we put in NO2 do you think we would be adding poison to the flour?

A. You may have a little poisonous material there; if you put salt in you do the same thing.

[A.] And sugar would be the same? A. Sure.

Q. So then you argue, do you, that because flour is poisonout to begin with, that the adding of some more poisonous substance to it it is not injured, that is your line of argument?

A. I do not argue that way at all.

Q. You say it is not injured by adding poisonous substances to it?

A. Sure it is not, I assume that it is eaten with common sense and judgment.

Q. All right. Now, then, do you hold, Professor Teller,—do you have anything to do with the health of people in your profession? [Q.] I have got a family.

Q. Well, I mean aside from the ordinary—yourself and those whom you love and who love you.

A. I don't think I am in any way connected with the medical part of the work.

Q. Do you know whether there are nitrates in the city water of Chicago?

A. Why, I think sometimes there are numbers of them, not always.

Q. Don't you know that every day it has been the custom for years of the chemical department of that city government to examine the water of that city for nitrates, and don't you know that they habitually and usually find nitrates?

A. I think they usually find some nitrates there, yes, sir.

Q. Did you make a loaf of bread that Professor—that Dr. John A. Wesener brought here?

A. I was connected with the making of it.

Q. Did you put some nitrates in? A. I think so.

Q. To show that yeast would reduce them to nitrates?

A. Yes, sir.

1943 Q. Do you know how much nitrates were put in?

A. I do not recall just now; I think it was—I would have to calculate it; I have had so many of these nitrate determinations my head is full of them.

Q. So is mine. A. We are on even terms, then.

Q. Yes, except I know about them and you don't; I probably would not if I was at it as long as you have been. You couldn't tell us how much you put in the bread?

A. No, I couldn't say just now, off-hand, just what my notes show, I could look it up.

Q. Where do you suppose that this unbleached flour that naturally ages gets four times as much nitrites as the bleached flour?

[Q.] The air is full of them, that is, the air contains it.

Q. But is the bleached flour in the air too? A. Sure.

Q. Does the bleaching render it immune?

A. It does not, not unless you have—

Q. Now, isn't that the most extraordinary phenomenon that you have ever witnessed in all your scientific researches, that unbleached flour will take four times as much nitrites from the air as the Alsop bleacher and the air together will put into bleached flour?

A. I thought that that was a remarkable discovery when I found that there is so much nitrites in flour that they would take it up in quantity.

Q. Now, discoveries may become so remarkable to scientists as to shock them, may they not, and make them doubt the truth?

A. Yes, and then we repeated it and found the same thing, and then we know we are right.

Q. Do you say that you found four times as much nitrites in unbleached flour as you did in the bleached flour?

A. Oh, you are laying too much stress on the nitrite, you didn't mean I should answer it that way, did you?

Q. Yes.

A. I tried to qualify it when I made the statement, that it was material which gave the same color re-action with the Griess re-agent as nitrites do.

Q. Then you didn't find any nitrites in the unbleached flour?

A. I would not be sure that there were nitrites there.

1944 Q. Will you swear that there were not any either the bleached or unbleached?

A. According to the best of my knowledge they are not nitrites.

Q. Yes, but you don't swear that they are not?

A. I am speaking under oath.

Q. Now, when Mr. Elliott asked you if you found nitrites, and we call nitrite re-acting material nitrites here, because—

A. Yes.

Q. Because it is shorter. A. Yes, that is so.

Q. And it is generally so called, is it not?

A. I think, that is it has been called that way for a considerable time.

Q. The world over?

A. Maybe, but it is often called that way.

Q. The world over, and so that when you swore there were no nitrites in bleached flour—

A. I put a qualification there.

Q. You meant to admit that there was nitrite re-acting material

[Q.] I meant to admit that there was material there which gave that pink color which disturbed so many people.

Q. That is nitrite re-acting material, isn't it?

A. That is material which gives the pink color with the Griess test.

Q. Is that called nitrite re-acting material in your publication? A. It has been referred to frequently in that way.

Q. In your publication? A. In my publication.

Q. Now, then, that nitrite material, that very thing, has been known by chemists for a long time, has it not? A. Yes.

Q. That re-action? A. Certainly it has.

Q. And that re-action has been spoken of by chemists this broad world over as the nitrite re-action and as establishing the existence of nitrites?

A. Yes, it has been spoken of that way.

Q. And yet when you come here this morning to testify before laity unskilled in chemistry, court and jury and counsel, you did make your solemn oath that there wasn't any nitrite in bleached flour?

A. I may have discovered that there are other materials besides nitrites which will give the same test.

Mr. Butler: I move to strike that out.

The Court: That is stricken out. He may answer the question.

1945 A. I say that I may have discovered that there are other materials that will give the same test.

Mr. Butler: I move to strike that out.

The Court: Yes, sir.

To which ruling of the court claimant then and there duly excepted.

Q. I want you to tell the jury and explain it in your own way and fully, why it is when these substances are known the wourld over in your profession as nitrites, that you did swear to this jury there were no nitrites in that flour?

A. All right.

Q. Now, tell that jury.

A. Gentlemen of the jury, I am aware that this test has been attributed to the presence of nitrites and nitrite material for a great many years; I have also made some experiments in my laboratory which I have made very carefully and repeated time and again, that indicate to me that there are other substances than the nitrites which when they are applied to this test in some way will become—they are changed in such a manner that they will eventually yield to pink color which is given by the Griess re-agent, that they are not originally nitrites and that they are therefore not in the flour as nitrites, but that they give the pink color with the Griess re-agent.

Q. Now, when Mr. Elliott asked you if you found such material or substance in unbleached flour, you said this: "I have found as high"—I am giving you the substance of it—"as four times as much in the naturally aged as in the bleached". Did you want this jury and this court to understand that that is the general rule?

A. I did not state it was the general rule; I said I had found it there, it was possible to get it there.

Q. You did not interrupt Mr. Elliott to qualify and say that that was the exception, did you?

A. I have not interrupted you to say that anything was exceptional very much.

Q. No, did you want the jury from your phrase, the form of the question and the form of your answer, to believe that that was the general rule? A. No, sir.

1946 Q. It is not, is it? A. No, sir.

Q. It is the great exception, isn't it?

A. It is the exception under certain conditions.

Q. Where the flour was spread out in contaminated air in your kitchen?

A. Where the flour was spread out ultimately, I have done it in various parts of the house.

Q. You are talking of bleached flour or unbleached?

A. No, sir.

Q. Didn't you use bleached flour?

A. We didn't have any at this time.

Q. Don't you use it yourself?

A. We do when it comes our way, but my wife buys the flour, and if it happens to be bleached all right, if it is not, all right.

Q. You were there at the time this New England dinner was cooked that is by Dr. John A.?

A. I say that made a beautiful illustration.

Q. He said he over-concentrated it, were you there when he concentrated it too much?

A. He simply put the meat in and boiled it down.

Q. I move to strike that out. He said he over-concentrated it; were you there when the over-concentration took place?

A. I think I was; I was there when the whole process was done.

Q. So that these nitrites are volatile, aren't they?

A. Well, now, what nitrites?

Q. Why, the nitrites that are in New England dinners?

A. He didn't drive them off.

Q. Well, I say they are volatile, are they not?

A. I would be at a loss to say, they were there.

Q. But the nitrites in flour are volatile?

A. But they are different compounds.

Q. Oh, so all this talk about nitrites in New England dinner is talk about a different kind of nitrites from those we find in flour, is it?

A. Well, I rather think that you might put it in that way, if you wanted to.

Q. Is that the truth, I don't want to put it that way unless it is true?

1947 A. That in the New England dinner is the more poisonous if you want to call it poisonous.

Q. I thought you were not a toxicologist?

A. Well, I am not.

Q. Well, now, why is it that you volunteer to say that the nitrites in the New England dinner were more poisonous if you couldn't tell whether a carload of flour was poisonous or not?

A. I have been reading up the dictionary and some related books that are almost exact, I am not a toxocologist.

Q. Are you willing to testify they are possible?

A. What is possible?

Q. As to the degree of toxicity of various kinds of nitrites?

A. I think I better not try to prove that up very strong.

Q. I think you better not either, if you expect to get away with it. Now, Mr. Elliott asked you this question, whether any sample of commercially bleached flour was injured that ever came under your notice, and you said no, am I right?

A. I do not recall any at the present time.

Q. You have examined over fifteen thousand of them at two and a half dollars per sample, have you not?

A. I don't know, we have examined a good many, we did not get two dollars and a half, we were working for the good of our country, and we hoped to set them right on this matter.

Q. So then in your patriotic enthusiasm you waived your fees? A. We often do that.

Q. Now, then, does it follow from your answer that if a flour has been injured by the bleaching process that it is then not a commercial bleached flour?

A. It would not be commercial product it if were seriously injured.

Q. That is it, so that your scientific training enables you to answer this way that no commercial bleached flour was injured, because if injured it was not a commercial article and not a commercial bleached flour?

A. I think we misunderstand each other; I mean that any flour that had been bleached that would be for commercial purposes, I don't mean to try to run the distinction over, I mean in the usual process of commercial bleaching, as

1848 far as I know.

Q. Now, let me ask you the question, is any flour which has been injured by the Alsop bleaching process a commercially bleached flour?

A. I don't know that I have seen—yes, I have, I over bleached one myself by putting it through the machine, I don't know how many times thirty or forty.

Q. Was it a commercial bleached flour?

A. No, it was not.

Q. So then if it is injured it is not a commercial bleached flour?

A. No, it would not be a commercial product any more.

Q. So that you can therefore conscientiously swear that no commercial bleached flour is injured, isn't that the way we get at that now?

[Q] That is not the way I interpreted it.

Q. That was not the way you interperted it? A. No, sir.

Q. It is not the way you worked it out?

A. No, any flour that is bleached so it would be commercial flour.

Q. You say you can smell this flour at the mill, smell the result of bleaching, the products of bleaching, you put it?

A. Yes, sir, you can detect the smell there.

Q. Well, it is at the mill?

A. Well, it is in the process of bleaching, it goes through the air, a kind of a volatile material.

Q. You can smell it in the cars where it is being rushed fresh from the bleacher?

A. I don't know that I have ever examined in particular.

Q. You can smell it in the room where it is being packed also too?

A. I couldn't say as to that, it might be in some instances you could.

Q. What is that?

A. It might be in some cases you could.

Q. Yes, the gas used gives off an offensive odor?

A. But this odor is different.

Q. The NO2 has an offensive odor?

A. Yes, but this is a different product.

Q. Nitrous acid—by the way, is there some moisture
1949 in flour?

A. I think so, usually is about twelve per cent.

Q. This patent states that the bleaching increases it, is that true?

A. I don't think it does, never found it that way.

Q. This patent states that the bleaching diminishes the starch, is that true

A. I don't think it is; I brought that out in one article that I presented to the miller.

Q. The patent states that it increases the proteids, is that true? A. That is not true.

Q. The patent states that it bleached to a dead white, is that true?

A. That would depend on the extent to which the process is carried.

Q. Did you ever carry it to a pure white?

A. I carried it to a pure white.

Q. Did you measure the color?

A. Pretty hard to measure it when the color is all gone, I don't know just what you mean.

Q. Well, did you test it scientifically for color?

A. Oh, I would call it dead white.

Q. Oh, no, you mean to a white? A. To a white.

Q. Are you familiar with the methods of measuring color?

A. Yes, they are no good.

Q. What colors are in flour?

A. I don't know, a color test of that kind could not be of any value from a commercial standpoint.

Mr. Butler: I move to strike out his language "for a commercial purpose."

The Court: Yes, sir, that is striken out.

Q. Now, for scientific purposes I want to know if you know what primary colors make color even in white flour?

A. No, I do not.

Q. You don't know? A. Don't know.

Q. Did you ever hear that is was orange and yellow?

A. I have heard that, yes.

Q. You don't know anything to the contrary do you?

A. I know it is yellow color, but I couldn't say.

Q. Did you ever know that the two primary colors were yellow and orange; did you ever know that?

A. The only color I have been able to get was a kind
1950 of yellowish orange.

Q. I mean scientifically do you know?

A. I have not investigated that phase of it especially.

Q. Did you ever treat it step by step to see what effect it had on the orange and what effect it had on the yellow?

A. I treated the color itself.

Q. Yes, but did you measure the reduction of orange and the reduction of yellow? A. I have not done that.

Q. Do you know that orange is much the stronger color than yellow?

A. I think it is rather a more brilliant color than yellow.

Q. And do you know that if you eliminate the orange and leave the yellow the flour will appear to be much whiter than it was before you started?

A. Well, that is all we are after, to get it whiter.

Q. You know that is a fact scientifically, don't you?

A. It might be.

Q. And do you know that the bleaching even increases the yellow from the moment you start and reduce the orange that it will still look whiter?

A. It might be an optical illusion, I doubt it.

Q. That would be an optical illusion, would it?
A. It would to me, if you put more color in it and still had less there.
Q. But there would be in it one which is a strong one and a weak one, and you take out the strong one, it might be lighter—is that too hard for you? A. That is too hard for me.
Q. Do you know what the Xantho reaction is?
A. Yes, sir.
Q. Will nitric acid produce it on bread?
A. It won't unless you get a lot of it in it. I have got some on my finger.
Q. Yes, sir, show that to the jury, will you, show that nitric acid will do to your finger?
A. There is a faint tinge of it there on my finger; I get it there sometimes, can you see it?
Q. Do you think that would be the same thing inside of your stomach? A. No, sir.
Q. Why?
A. Because you would not bet it strong enough there in flour.
1951 Q. Nitric acid would not hurt the inside of one's stomach?
A. Oh, if you get concentrated nitric acid there it would.
Q. I was not asking you about flour or diluted nitric acid. Was that nitric acid that stained your finger, nitric acid in flour?
A. No, sir, that came in a bottle.
Q. Would that same amount of nitric acid tear your stomach?
A. Not in the strength it is in flour it would not hurt it at all.

Mr. Butler: I move to strike that out.

The Court: It will be stricken out.

A. If there is any in flour, there is none there anyhow.

Mr. Butler: I move to strike that out.

The Court: It will be stricken out.

Q. Would the nitric acid which turned your finger yellow, turn it yellow inside your stomach?
A. I don't know just what you mean now.
Q. Isn't your finger turned yellow by the nitric acid?
A. Turned yellow.
Q. Would that same nitric acid which turned your finger yellow,—that was in the nature of a burn, wasn't it?

A. It was.

Q. Then you understand what I mean when I say the nitric acid which burned your finger and turned it yellow, do you understand that? A. Yes, sir.

Q. Wouldn't that do the same thing to your stomach?

A. There are juices in the stomach which would dilute to such an extent that it probably would not, the amount I had on my finger, it might a little.

Q. You think it would not?

A. It might a little.

Q. Do you think it would be wholesome to use nitric acid as a potable drink? A. Not very much of it.

Q. How much would you like to drink?

A. I should not want to make your sort of test.

Q. Is that the only reason?

A. Not answering from a [toxicogical] standpoint.

Q. You did tell me it would not hurt the stomach be-
1952 cause of the juices of the stomach?

A. I said it would not yellow it because it would be-too dilute.

Q. Wouldn't it hurt it?

A. I don't know that it would hurt it, probably if you got enough of it there it would.

Q. You think a large quantity would hurt you more than half of the quantity don't you?

A. A hard blow would hurt more than a light one.

Q. I big dose of poison is generally worse than a very small one, isn't it? A. Sometimes, unless—

Q. Sometimes a very small one is too, isn't it?

A. Some materials.

Q. Did you ever examine the stomachs of people after death to find out whether they had been poisoned to death or not?

A. I have examined some of them.

Q. If you find some strychnine in the stomach do you think you could say you found poison in the stomach? A. Yes, sir.

Q. If you found any strychnine you would say you found poison in the stomach?

A. I think probably you could, although you couldn't say it was put there as a poison to kill a person.

Q. You couldn't say who put it there, but you could say you did find the poison?

A. Yes, couldn't say that it was employed as a poison in that case, necessarily.

Q. And if you get enough to give you the re-action you would say there was a poison in the man's stomach?

A. I think that would be the common phrase that was used because—

Q. And even if that was nitrous acid you would say there was a poison in the man's stomach, wouldn't you?

A. No, I should not, because that is a normal constituent of food.

Q. Nitrous acid is?

A. Not all nitrous acid, but the same material that gives the nitrates.

Q. I am not quibbling about the materials at all myself; I am talking about nitrous acid. I ask you if you find nitrous acid in somebody's stomach, whether you find a poison in it or not?

A. I don't think that I can say that I would always.

1953 Q. If you found nitric acid in somebody's stomach what would you say.

Q. Qualifying, that small quantities are not poison, I couldn't necessarily say so.

Q. If you found the prussic acid re-action in somebody's stomach would you say you found a poison in it just enough to re-act?

A. Couldn't always say that, because it is present in certain drinks.

Q. Well, it don't make any difference where it is present, if you find it in the stomach it would not change whether he took it with food or drink?

A. Well, if alcohol is present, it would be the poison.

Q. So if you got a postmortem examination and found some lager beer in a man's stomach, would you say that you found a poison there?

A. I don't think I generally would, no.

Q. Would you class the lager beer the same as you would nitrous acid or the prussic acid re-action?

A. It can be taken in larger quantities. Why do you ask me this question?

Q. I ask you the question because you insist upon saying that everything understood to the world as harmless is a poison, and when I ask you whether those things which are understood to the world as a most deadly poison you decline to say that they are without qualifying and saying in concentration and certain quantities; that is why I ask you. I can't understand a scientific gentleman who will say, without qualification, that the flour in that jar, one kilogram of flour, is a poison.

A. I beg pardon, I qualified it and you objected to my qualification.

Q. Now, you would say that a man who says that that kilogram of flour is a poison, without any qualification, and I ask the same man if strychnine is a poison, and he refuses to say that it is without qualifying it. A. It is given as a medicine.

Q. You would denounce that as quibbling, wouldn't you?
A. I can't say that I would.
Q. You can't say that you would?
A. Because it is necessary to make yourself understood, to qualify it.
1954 Q. Yes, I see; so you think you would make yourself perfectly understood by saying that flour is a poison, do you, without qualification?
A. Why, we all know it is not a poison, when you use it properly we all know it is not a poison when you use it properly.
Q. So you say that the man who says without qualification that that flour is a poison is not tell the truth, don't you?
A. No, but when he is on the witness stand here and harrowed down for the purpose.
Q. Did Wesener tell you what he said about it?
A. No, sir; when he is harrowed down for the purpose it is necessary to qualify to make himself understood.
Q. Did he tell you he was harrowed down?
A. Why he said that you and he had some quite smart tilts.
Q. He thought that was smart, did he?
A. I don't know that he did, he didn't give you a very high compliment for it.
Q. Yes, I know, he didn't tell you that he ruled down here in Kansas City that that very kilogram of flour was a poison, without qualification, and ruled that strychnine and prussic acid was not?

Counsel for claimant objected to the question because he didn't say that.

Q. Now, ordinarily, in the ordinary course of things in life, not viewed from a scientific standpoint, if you put into an article of food a substance having an offensive taste, will that taste be liable to be in the food?
A. It depends upon the material put in.
Q. Yes, well, I know, but generally speaking?
A. You put yeast in, it has an unpleasant taste, but does not interfere with the bread at all.
Q. It affects the taste of the bread, doesn't it?
A. Not the unpleasantness does not, no, sir.
Q. I am not asking about unpleasant or pleasant, but bread made without yeast doesn't taste the same as bread made with the yeast? A. Sure it does not.
Q. So the yeast affects the taste of bread? A. Yes, sir.
Q. So generally the lard and the other ingredients af-
1955 fect the taste of bread? A. Certainly.
Q. Now, if you put NO2 in bread would it affect the taste of it?

A. Put enough in there, I put quite a lot in, couldn't get any taste.

Q. But it has an offensive taste? A. Yes.

Q. Now, if you put in perfume in bread would you smell it?

A. Some of them, some of them you would not because it volatilizes.

Q. By the way did you discover this terpene?

A. I have been working along that line for some time, got it pretty well fixed in my mind.

Q. Terpene is the same oil, or at any rate the terpenes give the rose and flowers their beautiful odor, do they not?

A. I couldn't say whether they do or not.

Q. It is an essential oil, the terpenes are the essential oils of plants, are they not? A. Yes, sir.

Q. And when you smell a beautiful bouquet the essential oil is terpene? A. Yes, sir.

Q. You know that as a scientist. Don't you know terpenes are transparent, according to all the authorities in the world, and turn yellow as time goes on?

A. Sometimes they turn yellow.

Q. Well, that is the rule in terpenes?

A. That is the rule.

Q. Now, chemistry, among other things, identifies substances by certain characteristics; do I make myself clear?

A. Yes, sir.

Q. So that the characteristics identifying terpenes are that they are the essential oils of plants, that at first they are transparent, may be found in plants of great varieties of color, but as time goes on they resilfy like terpene, that is the truth, and those are the great facts in chemistry which identify terpenes as such? A. Sure.

Q. And there is not known to the chemistry of the world, is there, unless it be the discovery in your laboratory, any terpene which reverses the situation, is odorless instead of being transparent, is yellow at first and as time goes on clarifies and becomes transparent now in the history of the chemistry of the world no such thing was ever known, isn't that
1956 true?

A. Coloring matter has not been very thoroughly understood.

Judge Scarritt: We except to that speech.

The Court: No, he didn't ask that.

Q. It is true, isn't it, that in all of the history of chemistry of the world there was never known a terpene at the same time odorless, yellow to begin with, and clarifying with the lapse of time?

A. It is only a few years that they have understood terpenes at all.

The Court: He didn't ask you that. Please answer that question; let's get along.

Q. Now, if flour freshly milled be treated with the Griess test before bleaching will it give the nitrite re-action?

A. In general.

Q. If it be tested immediately after the bleaching will it give the nitrite re-action? A. It will.

Q. Always? A. I think always as far as I know.

Q. Never known an exception to it, did you?

A. I have not tried any where there was one.

Q. Have you ever computed the amount of nitric acid which may be produced by a five horse power dynamo employing the flaming arc to produce it?

A. I do not recall now that I have done any work that would give that proof, no.

Q. Is it not a matter within your knowledge, at any rate as a chemist, that the Burkeland-Eyde process, which uses the flaming arc? A. I believe that is the process.

Q. And in the commercial manufacture of nitric acid?

A. Yes, sir.

Q. And there concentration is about seventy per cent, the nitric acid of commerce? A. I would not state as to that.

Q. Well, the nitric acid of commerce is about seventy per cent, isn't it? A. There are varying strengths.

Q. I know, but if you order a carboy of nitric acid
1957 you would get about seventy per cent?

A. I think we get a stronger acid frequently.

Q. How strong?

A. I couldn't say, I couldn't tell you off-hand.

Q. Is it within your knowledge that five horse power to make the flaming arc will produce three and one half tons of nitric acid of seventy per cent concentration per annum?

A. I have not calculated that out.

Q. You are not prepared to say?

A. Not prepared to give testimony on that point, no, sir.

Q. You say that is not true, are you prepared to say that a five horse power dynamo such as used commonly in Alsop bleaching will not produce nitric acid if it be used to make nitric acid?

A. It will produce nitric acid if it be used to make nitric acid.

Q. And it will produce it, will it not, at the rate of about three and a half tons per annum?

A. I would not say without calculation.

Q. Three and one-half tons per annum.

Judge Helm: Day and night, do you mean?

Mr. Butler: Yes, sir, both day and night, the full time.

Q. You would say that three and one-half tons nitric acid is a deadly poison, isn't it?
A. It depends on what you did with it.
Q. Well, wherever it was, it would be poison, in a court it would be poison, in chemistry it would be poison, in the stomach it would be poison, it would be poison everywhere in the world, wouldn't it?
A. There is a chance for variation definition there.
Q. The same variation?
A. There is a chance for variation and definition there.

By the Court:
Q. Let me see if I understand it. You claim anything is poison or not according to concentration and what it is used for? A. Yes, sir.
Q. And a bottle of strychnine, suppose it is not used, is not a poison?
A. It would depend on how it was used, whether it was a poison or not.
1958 Q. If not used it is not a poison?
A. Does not make a poison.

By Mr. Butler:
Q. It is not a poison unless somebody uses it?
A. It does not become a poison until put in a position to produce a poisonous effect.

Judge Scarritt: What he means, it has to be compounded with something else.

By Mr. Butler:
Q. So then all these laws requiring a druggist to label poisons, are no good, because there are no poisons?
A. No, that does not follow.
Q. What is the law of mass action in chemistry?
A. What are you trying to get at, please?
Q. Is there a law in chemistry known of mass action?
A. Well, I don't know that I can state it to you, just interpret to you just what you mean on that point.
Q. Well, I mean this, is there a phrase in chemistry designating a law, a chemical law, known as the law of mass action? A. I think there is, yes, sir.
Q. What is that law?
A. I cannot state it now, I haven't got it clearly in my mind, it would be, the definition, in the book.
Q. Do you think you would recognize it if I stated it?
A. I might.

Q. It is this: Given a substance, complex in character, containing a variety of bases and treated with an acid like hydrochloric acid, we will say, is it not the law of mass action that that acid will combine with every element in the mass for which it has any chemical affinity?

A. I think that law is true, I will not define it as you name it.

Q. Has nitric acid any affinity for proteins? A. Yes.

Q. Has it any affinity for starch?

A. Yes, I think acid has.

Q. Has it any affinity for the vegetable oil in flour?

A. Well, that is a little different,—yes, it will act upon them.

Q. So I have mentioned roughly the principal groups, haven't I?

1959 A. You have stated the chief elements.

Q. The principal elements of ordinary flour? A. Yes.

Q. So, then, it is the law of mass action, is it not, that if flour be treated with nitric acid, the nitric acid will combine with the proteins, with the starch and with the oil, and if there be not enough to satisfy each base, satisfy it chemically, it will distribute itself among the various bases, depending upon the volume of quantity of each base and the strength of the chemical affinity between nitric acid and each base; that is the law?

A. If you apply nitric acid it will combine with these different constituents if you had enough of it there.

Q. And even though there is not enough to satisfy the chemical affinity of all of the bases or of any one of the bases it will distribute itself according to the law of mass action to all of the bases in the bleached flour it has any affinity with?

[A. It may distribute itself according to the law of mass action to all of the bases in the bleached flour it it has any affinity with?]

A. It may distribute itself, it will combine with some, it will not with others.

Q. Well, it will combine with all, in some degree, if there is any chemical affinity?

A. It is a little different in organic products combining like flour than it is with acids in bases in the solution.

Q. You say the law does not apply to flour?

A. Not so much.

Q. Do you say it does not apply at all to flour?

A. I don't believe that you can take that position.

Q. It will satisfy terpene first?

A. I don't think nitric acid will satisfy terpene at all.

Q. Will any of the oxides of nitrogen? A. Yes, sir.

Q. Which one? A. N2O3 will, I think.

Q. That is a liquid, isn't it? A. I guess not.
Q. N2O3 is not a liquid?
A. I don't think it is; it has not been isolated as a liquid, as far as I know, it might be gotten down to that point.
Q. Isn't it a bluish liquid and is only known in the form of bluish liquid, and isn't it so laid down by all text-
1960 books on chemistry?
A. If you unite it with what was that substance you are speaking of,—it may be,—I should think.
Q. You spoke of it. A. Nitrogen peroxide.
Q. N2O3, I did not intend to mention that.
A. Now, it unites with water to form a greenish substance which is probably the nitric acid.
Q. It has affinity with water?
A. It has affinity with water.
Q. Strong?
A. Well, not as strong as some other acids have.
Q. No, but is it a strong chemical affinity?
A. It will go in solution in water but get out if it can.
Q. It is not known as a gas at all, is it?
A. That is a pretty hard thing to say just what it is.
Q. Isn't it laid down in the chemistries of the country, and uniformly of the world, that it is not known as a gas?
A. It is usually found in a gaseous condition where it is.

Mr. Butler: I move to strike that out as not responsive to my question.

A. I could not answer it any other way.
Q. I am asking you isn't it within your knowledge that the text-books on chemistry do state that it does not exist as a gas?
A. I think there are some textbooks that state the contrary.
Q. Which one?
A. I think Remsen, if I remember right; I don't mean Remsen, I mean Roscoe and Chalmer, I think states that, if I am not mistaken, I may be mistaken.
Q. The common understanding as evidenced by the articles is that it does not exist as a gas?
A. It is two gases exist there together, and when they go in combination they combine as N2O3.
Q. To form a liquid?
A. To form with water a liquid, the nitrous acid or a nitrite with bases, but now I don't believe that there is very good authority on that question as to whether they really exist as gas nitrates N2O3, or whether they do not; that is a question as far as I am able to determine, but I know that when the two are present—
1961 Q. NO2 is a gas? A. NO2 is a gas.

Q. NO is a gas?

A. NO is a gas, and when those two are brought in combination in the right proportion they form nitrates or nitrites.

Q. Form what?

A. Form a nitrite, form with bases a nitrite or nitrite.

Q. Is that organic or inorganic?

A. When they are brought in combination.

Q. That forms a nitrate either organic or inorganic, depending on the base?

A. As they differ with the bases, I don't know that I can say they have always an organic substance, but they differ, the alkaline basis, such as KOH and NaOH.

Q. So it would put nitrites in flour?

A. Not necessarily, no, because you get an organic substance there, a different nomenclature entirely.

Q. Will you go to the blackboard and write the chemical re-action for the formation of nitrite from N2O3?

A. That is a pretty big undertaking for a person on the witness stand, I will try.

Q. Perhaps you do it on a piece of paper, I don't want to rub that out because I had so much trouble learning it, put it on here.

Mr. Elliott: Mr. Butler, will you kindly repeat the question so the witness knows what he is doing?

Mr. Butler: I think he holds it in mind; he would not try it unless he did, I am sure.

Witnes: I guess I got it.

Q. Read it.

A. N2O3 plus H2O equals 2HNO2. It figures four on that side, four on this side, two on this side, two on this side; I guess that is right.

Q. That is the chemical re-action that takes place, is it?

A. I think that is about what they would count on.

Q. And N2O3 is a gas, is it?

A. That is the material which when it comes together in liquid makes that compound. I think some of the textbooks state if you get NO2 gas and NO that they produce a nitrite when they come in contact with the base, ... I couldn't see now, those molecules, to see how they start.

Q. I know, but what I am trying to find out is in this re-action that you have written have you admitted that the N2O3 is a gas or a liquid?

1962 A. I assume that it is a combination. I may write NO_2NO that would be the same.

Q. Is a mixture the same as a compound?

A. When it results the same, the textbook—

Q. Is NO2 plus NO a compound?

A. If you pardon me, I think the textbook which I referred to, which is a very good one, states that it may multiply the material in certain ways and then expose it to the test, then that it may be assumed or may be thought that you have the NO2 present and the NO2 that will unite with that base to form the nitrite. That is the understanding of it.

Q. Isn't it the common understanding by chemists that N2O3 exists only in liquid form?

A. I can't say that it is.

Q. Will you say that it is not?

A. I say that the common understanding is that those two gases may exist there together and that they combine, that is as far as I can go.

Q. So no matter how it is, if we take N2O3 and bring it into contact with water it will produce nitrous acid?

A. If you bring it in contact with a liquid, with water.

Q. And nitrous acid will form nitrites in flour, won't it?

A. No, that don't follow.

Q. Do you say nitrous acid will not form nitrites in flour?

A. If you put nitrous acid in flour it would.

Q. Does it make any difference whether you get it out of a bottle or produce it chemically?

A. It makes a difference whether you put it in there as nitrous acid or put it in there as N2O3.

Q. I am speaking of nitrous acid.

A. I know, but we got to draw a distinction.

Q. I know what distinction you are drawing.

A. May I tell you I have put nitrous acid in flour and took it free from it, and I found it was no bleaching effect and it would be there as nitrous acid.

Q. So you are satisfied nitrous acid does not bleach?

A. I am satisfied nitrous acid as nitrous acid does not bleach.

Q. You are satisfied that nitric acid does not bleach?

A. I am satisfied that nitric acid does not bleach.

1963 Q. And so you are pretty well satisfied that the Alsop people cannot convict the NOCl people of infringement aren't you?

A. I am not talking of the patent whatever.

Counsel for claimant objected and moved that it be stricken out.

The court sustained the motion and objection.

Q. You are familiar with the Williams process?

A. I know something about it.

Q. Does the bleaching process by the Williams' method employ any of the steps of the program NO2?

A. I think there is generally NO2 produced in the process, but I can't say to what extent, it may be prominently, I don't know.

Q. In the Naylor-Genard there is?

A. I have not examined the gas from that machine and would not answer, although I have it stated to me that it was the contrary.

Q. In the Nordyke-Marmon system?

A. I would not enter into that without having examined the gases.

Q. Have you examined flours bleached by all systems, the Williams included? A. I think I have.

Q. And the nitrocyl chloride and all that?

A. I have seen flour from all over.

Q. And did you observe any difference in flour?

A. I would not say, they are all alike.

Q. Bleached, partly bleached flour, as far as every bleaching process known in this country, it affects flour alike?

A. Yes, it removes the coloring matter, that is all it does, if it is commercially carried out.

Q. If it is more than that it is not commercial?

A. It is not used commercially to do more than that.

Q. But if it is more than that it is not commercial?

A. It is not used commercially to do more than that.

Q. What substance or substances in bleached flour give the Griess test?

A. To the best of my knowledge it is a body that is produced by the action of oxides of nitrogen upon the coloring matter.

Q. Give us the formula of the body?

Q. The formula—it might be written C10H16.

1964 Q. That is this terpene?

A. That is called a terpene, that is the general formula for terpene.

Q. That is the formula for the terpene of the rose, isn't it?

A. Well, I have forgotten about the rose, there are terpenes in some of the essential oils that are of that nature, but I couldn't say now.

Q. But all of the essential oils are of that formula?

A. I don't know that they are, there are other constituents.

Q. Do you know to the contrary?

A. Yes, methyl oil of winter-green, that is not a terpene.

Q. You said all essential oils, all of the essential terpene oils have the same formula, don't they?

A. No, not necessarily.

Q. What terpene has a different formula?

A. The homo-terpene and polly-terpenes and a lot of other terpenes.

Q. I mean the simple terpenes?

A. The base of terpenes is C10H16, there are a number of terpenes of that formula.

Q. That is the [bases] of all of them?

A. That is the base with reference to them, but not necessarily the base, because the semi-terpene is just half of the formula.

Q. Nitrogen peroxide may be N2O4 just the same, may it not? A. Yes, it may be.

Q. But it is always referable to NO2?

A. Always referable to NO2.

Q. How much NO2 gas will it take to satisfy, how many parts per million of flour will it take to satisfy the coloring matter in the flour which is ten parts to the million?

A. Now, if you allow me to answer that with N2O3 I can do it with a clearer conscience.

Q. I am not acquainted with N2O3, but I am very intimate with NO2 and I would like to have it in those terms.

A. If I should refuse to believe that NO2 combined with the coloring matter at all—

Q. I don't care what you believe.

A. If it can be put in the form of N2O3 I would rather do it; now, may I figure it out on the paper?

A. Yes, certainly, I would like to have you figure that 1965 accurately.

A. That would be C10H16 would be about 120, wouldn't it, if I remember, for the carbon, and 16 for the hydrogen, 136, N2O3—or NO2, I mean, is 32 and 14 are 46; 46 divided by 136 would give the amount, would it not, of NO2.

Q. I really don't know a thing about it.

A. Well, that is what I thought.

Q. I don't know a thing about it; I am taking your word for it.

A. Well, that would be somewhere in the neighborhood of 33 or 34 if my figures are correct.

Q. Parts to the million?

A. No, per cent of the coloring matter.

Q. What?

A. 33 or 34 per cent of the coloring matter would be, that coloring matter would be increased in about that proportion, I might tell you some experiments.

Q. No, let me be sure that I understand it.

A. All right.

Q. Now, I suppose there could be employed more NO2 than you can treat flour with, more NO2 than would go into the terpene?

A. May I tell you what I did along those lines years ago?
Q. No, let us be clear; I am after a very simple matter.
A. That would clear it up.
Q. Well, I will ask it my way, Professor. A. All right.
Q. And you may answer it my way, or decline to as you see fit. I want to find out from you how many parts of NO2 to the million of flour will combine with the terpene the minimum amount of NO2, you have ten parts of terpene per million of flour? A. Ten parts of terpene per million of flour.
Q. That you have sworn now?
A. I said that was to the best of my memory was about it.
Q. Now, ten parts to the million of terpene? A. All right.
Q. One part to a hundred thousand?
A. Now, if we may take—
Q. Now, I want the amount of NO2 expressed as nitrogen that it will take to combine chemically with that terpene?
A. Now, if we take 34 percent of that amount or practically one-third of that amount, that would be three parts
1966 per million of N2O3 that we should have combined with that terpene, wouldn't it?
Q. I don't know.
A. Well, that is according to the best of my figures, about one-third of that, 34 per cent in practically one-third of the weight of the terpene if I made no mistake, I make mistakes in figures.
Q. How many parts per million of the gas would be used to combine with that terpene?
A. Beg pardon, the question I was to answer was the amount of nitrogen.
Q. Yes, very good. A. The amount of nitrogen.
Q. Very good.
A. All right. Now, the nitrogen N2O3 is a little less than one-third, N2O3, isn't it. 169 oxygen and 149 nitrogen?
Q. Yes.
A. We had to take over three parts per million of the N2O3 that you combine with the coloring matter which we had assumed that it is more than here, didn't you?
Q I am not talking about N2O3 at all.
A. Beg pardon, I meant to say NO2, that was a misstatement. We have about one-third of ten parts per million of NO2 that should combine with it, and about one-third of that, one-third then is nitrogen which would be in the neighborhood of about one part per million which is about the average which we find in bleached flour, we may have more coloring matter, or we may have less coloring matter.
Q. So then your idea is one part per million of the gas if calculated as nitrogen would satisfy the terpene chemically?

A. It might satisfy it would satisfy the terpene chemically if my calculation was right.

Q. Now, let me be clear about that? Given ten parts of the terpene per million?

A. That is about it, that is one-third of one third.

Q. If the figures are not exactly right, why, you have stated it is your best memory? A. Yes.

Q. So we will assume it is ten parts per million of the coloring matter, the terpene? A. The terpene.

Q. Now, one part per million computed as nitrogen or calculated as nitrogen?

1967 A. Should be somewhere in that neighborhood, might be more or less.

Q. Will satisfy all that coloring matter?

A. That would be somewheres near it, yes.

Q. And would impart one part per million of nitrogen, of nitrous nitrogen to the flour? A. How is that?

Q. And would impart one part per million of this nitrite re-acting material to the flour? A. Yes, sir.

Q. Now, then, in the flour which you found four parts per million in, what became of the other three; you have only used one-fourth of it on the coloring ingredient; what did you do with the other three-fourths?

A. Well, I couldn't tell you what we might do with the other three-fourths because I don't know how much coloring matter there may be more coloring matter than that there.

Q. But let us assume that there was no more coloring matter, and that one part to the million of the gas calculated as nitrogen— A. Yes.

Q. Satisfies the ten parts of the coloring matter?

A. Yes, it might be a wrong assumption.

Q. Yes, but assume that. A. Yes.

Q. But you do find four parts per million in the flour?

A. Yes.

Q. Now, how do you explain that?

A. Well, I have not explained it.

Q. Can it be explained?

A. I don't know whether it can be explained or not; I suppose it can.

Q. Why would you say that that was not commercially bleached flour?

A. It was not commercial bleached flour, yes.

Q. You would say that it was over-bleached, over-treated?

A. There is a way that it might be explained, and that is on this assumption—

Q. That it combined with something else in the flour?

A. There are ammonium nitrites there to some extent, and some of those may have adhered to the flour; I can't say as to that.

Q. You couldn't say as to that? A. No, I cannot.

Q. It might combine with bases in the flour?

1968 A. What bases in the flour, for instance?

Q. Any of them. A. But what would they be?

Q. Aren't there a lot of bases in the flour, potassium, calcium?

A. But they are not there as bases, they are already acids.

Q. Oh, I see.

A. They could not combine with them.

Q. Protein hasn't a base?

A. Protein will combine with acid under certain conditions.

Q. It might combine with the terpene?

A. It might combine with the turpene, but that is—

Q. That might produce a nitroso compound?

A. It might produce a nitroso under compound these conditions.

Q. Or a nitro compound?

A. Possibly a nitro compound under those conditions if you have it there as N2O3.

Q. Or a xantho proteic re-action?

A. Never found it under those conditions.

Q. No, but it might chemically?

A. Have to get it awful strong to do it.

Q. That is right, so that you say that it is true, do you not, that if more of the gas be used [that] will satisfy the coloring matter which you think is ten parts to the million, the excess, at least if we consider the combination with the color an exception to the law of mass action— A. Yes, sir.

Q. The excess at least will go in part to the proteins?

A. It might go, a good thing if it did sometimes.

Q. And it would form nitroso compounds and nitro compounds, and if strong enough the zantho proteic re-action?

A. It might do so, yes.

Q. And according to the laws of chemistry you believe that it would do that, do you not?

A. I believe it would combine with the proteids pretty soon after you got an excess of it there.

Q. And you don't think that would affect the color of the flour injuriously?

A. I am sure it would not because I put the acid in there to affect the proteids.

Q. It would not affect the smell of it?

1969 A. It would not, no, sir.

Q. Nor it would not affect the taste of it, would it?

A. No, sir.

Q. And nitroso compounds and nitro compounds produced by the oxidation of nitrogen through nitrous acid, through

nitric acid—this may not be your field, and if not, we will not enter upon it.

A. I would not want to.

Q. Is it desirable in food?

A. I don't know whether it is or not, nobody stated, because we don't know all the chemistry of all these foods yet.

Q. Well, I am sure I do not. Have you your table of acidity showing your results in the tests of acidity there in Kansas City, with you?

A. I think I have some tables, I am not sure.

Q. Now, just wait a minute, let me be clear, you have examined for acidity a great many thousand times?

A. I have examined a great many flours for acids, don't know how many.

Q. Well a great many?

A. Off and on for a good many years.

Q. Have you preserved the records?

A. Not all of them, no, I would have to get them and compile them if I did.

Q. But you have compiled certain records?

A. I have some records, yes, and I tell you what I did.

Q. Now, wait a minute. You understand acidity to be undesirable you understand it to be undesirable to increase acidity? A. No, sir.

Q. You think it is desirable?

A. In many instances it is absolutely essential to get the best results.

Q. Mineral acid?

A. Yes, sir, you employ different acids; if you put mineral acids in bread you can smell it in small quantities.

Q. So the bleaching does not improve it then, that way because it gives it more mineral acids?

A. I can't say that it does, it might do it and might not, and you get poor bread with it.

Q. Will it improve it to increase mineral acidity by adding nitrous acid? A. I can't say it does.

Q. Does it injure bread?

A. I have made bread that tasted just as looked just as good and smelled just as good and everything where I added it there.

1970 Q. Does it improve bread to increase acidity by the addition of nitric acid?

A. I don't know why it would hurt it in any way, a little of it wouldn't hurt anything.

Q. Or would you think it improved it?

A. I say I don't know that it hurts it in any way.

Q. I ask you if it improved it?
A. Oh, it makes a larger volume of certain flours.
Q. The bleaching process makes a little larger volume than the unbleached? A. Sometimes it does.
Q. I know, but wherever you get any variation that is the truth? A. That is generally the case, yes sir.
Q. So then you say that bleaching so affects the gluten as to increase the loaf volume?
A. Sometimes it helps to increase the loaf volume.
Q. I know, but suppose the law would seem to be that it so affected some substance in the flour as to increase the loaf volume?
A. Yes, sir, might remove the moisture and give you a creamy more solid flour there and then increase the loaf volume.
Q. Let me see about that. Now you find that the moisture is decreased about 1/10—you find, do you not, that the bleaching decreased moisture about 1/10 of one per cent?
A. I have not so stated.
Q. No, but isn't that a fact, I ask you if you did not so find?
A. I think it often increases it more than that.
Q. Decrease you mean? A. Decreases it more than that.
Q. Well, didn't you report it was .14?
A. That is the moisture you know.
Q. The moisture I know?
A. Now what are we getting at?
Q. You said that bleaching decreased moisture?
A. Bleaching by passing air through it.
Q. I didn't ask you how it decreased moisture?
A. Why sure, but the air takes the moisture away.

The Court: You talk too much.

Witness: I would like to quit right now.

1871 Q. If you will just be fair with me and answer my question. Have you not reported determinations that indicated that the moisture is decreased from 1/7 to 1/10 of one per cent? A. I may have reported such.
Q. That is the truth, isn't it?
A. It ought not to decrease it more than that.

By the Court:
Q. Is it the truth or not?
A. I couldn't tell you that, I couldn't tell you that because I find thousands of flours—

By Mr. Butler:
Q. Now then let me find out—the air will decrease moisture, will it not? A. Sure.

Q. Without any gas in it?
A. The moisture goes through the air, yes.
Q. It is not chemical reaction with any of the oxides of nitrogen that reduces the moisture, is it?
A. No, sir, not at all.
Q. Now then do I understand that if a housewife would go to the mill and get some flour, and dried it out a little and immediately used it to make bread, it will make a larger loaf?
A. Sometimes it will, sometimes it won't flours are variable.
Q. What is the law about it?
A. Well, it depends on the flour entirely.
Q. Depends on the flour entirely? A. Sure.
Q. Some flours will do it?
A. Some flours will increase the volume of drying out and others not so much.
Q. Will they all? A. Some of them will and some won't.
Q. There is no law about it then?
A. I don't think there is; I have examined thousands of flours; if you give me any constant law in flours I would like to see.

The Court: He didn't ask you for a lecture.

Judge Scarritt: He has a right to explain.

The Court: The witness has no right to deliver us a lecture every time some question is asked.

1972 Judge Scarritt: I submit he has a right to answer that kind of questions in that way, because they are an attempt—they are trick questions right straight through, and attempt to catch him and not allow him to explain to put him down on something.

The Court: I don't see any trick question about it. I as a non-scientist could answer that question yes or no, and I think this witness can, he ought to do it.

Witness: Can I tell the difference?

The Court: No, please answer the question, and let's get along.

Judge Scarritt: I think the court ought to protect the witness.

The Court: I think I ought to protect the jury and myself to bring this case to a conclusion some time,—a very simple question whether air will take off moisture or whether it must be attended with some resulting gas from this flaming arc.

By Mr. Butler: (resuming.)

Q. Did I understand you aright to say that not so far as you have been able to observe that the only effect upon digestibility of food—the only effect of bleaching upon the digestibility of food products made from flour was to improve it?

A. No, sir; I said that sometimes we get higher results and sometimes also they were very close together.

Q. Well, what is the effect then of bleaching on digestibility?

A. I don't think there is any effect on the digestibility from commercial bleach flour.

Q. But every time you found any change it was in favor of improvement?

A. In some experiments with thoroughly overbleached flours and investigations I get an improvement in the digestion.

Q. So the more you bleach it the more digestible it is?

A. Yes, the reason for it,—there is a reason for, very simple to the physiological chemist.

Q. So all overbleaching so far as you demonstrated
1973 with it, had some effect on digestibility?

A. Why, certainly, you can treat it so that you can produce an effect that is not ever produced in commercial flour bleaching.

Q. Well, I mean also that you argue, do you not, that there would be a similar effect if it was not bleached quite so much?

A. No, not at all, I said that I did not believe there is any difference whether it was bleached or not bleached on the digestibility.

Q. Will you dictate to the reporter the details of your digestion experiments or methods?

A. I have a whole lot of digestion experiments that were carried out along those lines. Now do you want the figures and everything? I can read them off my paper.

Q. I would like to know your methods, you see your figures don't show anything but I would like to know your method?

A. All right.

Q. Your figures don't show whether it helps it or hurts it.

A. Sure.

Q. Now I would like to know your methods?

A. First I made some bread from the flour bleached and the unbleached.

By Judge Scarritt:

Q. You say you have your figures there?

A. I have figures here, yes, sir.

Q. You can use them if you want to.

A. I can put the figures in afterwards if it is necessary, I will just give an outline of the detail, will that be satisfactory?

By Mr. Butler:

Q. Well, Professor Teller and Judge Scarritt, I think I can make it plain to you there is no trick about this. I want to find out what method he employed in his digestion experiments. I said I didn't care for his figures.

Judge Scarritt: I beg pardon.

Mr. Butler: Because he says his figures don't show anything one way or the other from which a conclusion can be drawn.

Judge Scarritt: It shows that they are the same.

1974 Witness: Shows that they are the same, might be slight differences but within the limit of error.

Judge Scarritt: I don't understand what you mean by method, whether the Koellner method or some other method.

By Mr. Butler:

Q. Is the Koellner on digestibility?

A. No, sir, that is on bread making. The digestion experiments I state to you were all made in laboratory experiments.

Q. I so understood you.

A. All right. I first made the bread from the bleached flour and the unbleached flour.

Q. Exactly alike in each instance?

A. Exactly alike as near as it was possible to make them, manipulated in exactly the same manner and the same ingredients.

Q. By the Koellner method? A. Koellner, no.

Q. How did you make the bread?

A. It was made by the usual method there in the bake shop which we use in our laboratory room, took a certain amount of flour, and a certain amount of yeast and water—do you want that?

Q. Yes, go on.

A. A certain amount of flour, certain amount of yeast, sugar—

By the Court:

Q. Lard and salt. A. Lard, salt and water.

By Mr. Butler:

Q. Yeast?

A. I think I stated yeast. If I have left out anything it was by oversight, because they are all there, and the bread was made.

Q. Now go on.

A. After the bread was properly baked, I grated the interior of the loaf in a nutmeg grater or something of a similar

nature, it might have been a little larger, got the size particles as nearly uniform as possible, put them in a liquid which resembled to a certain extent the digestive fluids in the stomach, one was for pancreatin, the other for pepsin. For the pepsin experiment I think we used about 20 milligrams of pepsin, as I remember it now, and 3/10 of one per cent of hydrochlorid acid, kept these together with the bread in the bath for
1975 one hour at a temperature of substantially that of the the body.

Q. The quantity of the digestive fluid?

A. 20 grams of bread, 200 centimeters of the liquid, 3/10 per cent hydrochloric acid, 20 milligrams of pepsin, used for quantities, but that was the one that I got the most results on; it is only a question of imparting the time, rapidity of action, whether we have more or less.

Q. Go on? A. Have I stated it all?

By Mr. Helm:

Q. I think you misspoke yourself as to the hydrochlorid acid.

A. 3/10 of hydrochlorid acid, the acid of the stomach, the stomach is always [acified], hydrochlorid acid, in fact the experiments which I carried showed it was necessary to have it so.

Q. Simply the question whether you got the quantity applied to the ingredients that you mentioned?

A. 3/10 per cent of hydrochloric acid.

The Court: Go on.

A. 20 grams of the bread ready to digest for one hour, filtered tested the filtrate with the burette to see whether digestion had really taken place.

Q. What temperature?

A. Temperature of the body, about 38 degrees, somewhere there, Centigrade.

Q. That would be 98.2/5 Fahrenheit?

A. To the fraction I forget now, only a question of rapidity, the temperature of the body is a little higher.

Q. What did you do to determine as to the amount of the bread loaf was what?

A. Determined the amount of proteid that went into the solution; I will say here that I carried on a blank—

Q. Did all the proteid go in the solution in both instances?

A. It is not, in some instances, where I used sufficient pepsin, it did; in those instances where I used less I think there was a slight residue that was not digested, but the greater part

of it went into solution, and it gave the burette, which is
1976 the proof of the material having been digested; then I determined nitrogen.

Q. How did you determine the proteids to go into the solution?

A. I obtained clear filtrate, then determined the nitrogen present by the Kjeldahl method.

Q. Now was that all?

A. That was all that referred to the pepsin. The pancreatin was substantially the same, except with a solution for alkaline instead of acid, and as a result more of the pancreatin used because it is not so active a ferment.

Q. How much pancreatin juice did you use?

A. Used the same, 200 cubic centimeters of the liquid, I think about 3/10 per cent of sodium bicarbonate.

Q. Instead of the—

A. Instead of the hydrochloric acid.

Q. Those were the only differences in the flour?

A. And a little larger quantity, I guess it was, about 112 milligrams of pancreatin, I don't know which was the most active, but it was some we got from the drug store and was quite active.

Q. Was there any nitrite in either bread?

A. There was nitrite in the bread, I baked it so that I think there was 3/10 per cent nitrite; I baked some for parties that were specially high in nitrites.

Q. 3/10 of one per cent.

A. 3/10 of one part per million, I beg pardon.

Q. And in the bread baked from the unbleached flour?

A. Traces, only traces only, that we always get, can't get away from the stuff.

Q. The yeast won't consume it all?

A. The yeast sometimes will consume it all, and sometimes won't; it depends on the yeast; some makes of yeast will consume it, others may not consume it quite all.

Q. Did you determine the water contents?

A. 39 per cent of water in the three breads, I think in this one particular instance I have in mind.

Q. Did you dry the bread before the experiment?

A. Did you try it, just grated it so as to get nearly a uniform mass.

Q. Did you bake it just as you baked the other?

A. Yes, I did not grind it up that fine to put in the mouth.

1977 Q. I mean you grated it?

A. I grated it just taking the ordinary fresh loaf of bread the day after it was baked.

Q. When you undertook to grate it you took it in the same condition as you would bread to eat? A. Yes, sir.

Recess until 2 o'clock p. m.

Pursuant to adjournment court met at two o'clock p. m., Monday, June 27, 1910, and proceeded with the trial of said cause further as follows:

George L. Teller, resuming the stand, was cross-examined further by Mr. Butler, and testified as follows:

Q. If NO and NO2, together, be led through NaOH, will not the result be the production of a nitrite, and a nitrite of sodium, and will not NO pass through as such?

A. In some instances, at least, there will not be any passage of the NO. Probably the two will combine in the proportions, to form nitrite of sodium.

Q. When the NO passes through, as such, doesn't that indicate that you started out with a mixture, and not a compound; that NO and NO2 were mixed, and not a compound, as N2O3? Doesn't that so indicate?

A. If there are any bare instances where it does that way, it might indicate it.

Q. Now, isn't it laid down by ....., a well know chemist that that takes place, that way, and does he not assert that that is the reaction that does take place?

A. He might state that, somewhere, I do not know.

Q. Are chemical laws variable, or constant?

A. There are constant chemical laws, probably, subject
1978 to the conditions that produce variability.

Q. But, under like conditions, they are always constant, are they not?

A. Yes. We may interpret them, however, wrong.

Q. Yes, or misrepresent them?

A. Misunderstand them, and then we have to arrive at our—

Q. (Interrupting) But the laws of chemistry are definite?

A. They are quite definite, yes.

Q. And certain? A. Yes.

Q. Constant in action? A. Yes.

Q. As certain as the law of gravitation?

A. They are, under the same conditions of action.

Q. What nitrite gives the nitrite test in the flour, that has been put through the bleacher?

A. I do not know that any nitrite does.

Q. You get the Griess test, don't you?

A. We get the Griess test, yes.

Q. That is a nitrite, isn't it?

A. I was telling you this morning that there may be other substances, besides nitrites, that produce that pink color.

Q. What other substances, beside nitrites, produce that pink color?

A. Substances that are formed by the direct union of N2O3 with a terpene.

Q. What is that substance?

A. That may be called a nitrosite.

Q. A nitrosite? A. A nitrosite.

Q. Giving the nitrite reaction? A nitrosite, giving the nitrite reaction? A. Well, I have never seen it—

Q. (Interrupting) Is there any nitrosite test?

A. What is it?

Q. Is there a nitrosite test?

A. Nitrosites will respond to the Griess reagent.

Q. What is the chemical formula for the thing that happens in the coloring matter of flour, or the chemical reaction?

A. To the best of our knowledge, there is a direct union of a ..... terpene, which we have assumed, for this case to be—for this—our statement, to be—

Q. (Interrupting) A terpene?

A. Terpene, of the formula C10H16. Unites directly
1979 with the N2O3, to form the compound which we call nitrosite.

Q. That is what? A. A nitrosite.

Q. So, then, this substance, not heretofore known as a terpene, you call a terpene?

A. We are making new discoveries along that line.

Q. Yes, and you name that a terpene?

A. There is no other name for it in chemistry, that I know.

Q. And the substance heretofore known as a nitrite, you name a nitrosite?

A. May I state, here, Mr. Butler, that we are conducting our experiments along these lines, and we reserve the right of scientists, in a year's time to preserve our experiments and publish our results in a scientific journal.

Q. We cannot delay the trial for that.

A. No, we cannot delay the trial for that, but that is through courtesy among scientists. I wished to bring that out, so that the scientists present will understand our attitude in the matter.

Q. In other words, you are not ready, as scientists, to lay down to the chemical world, these propositions that you have just given us?

A. I am ready to lay down the propositions, so far as we have gone, but not to picture out through the molecule, as it may exist there.

Q. In other words, you are not willing to label your discovery, a terpene, and label the other reaction a nitrosite reaction?

A. I think we have gone far enough we can label it a terpene, as compared with all others that behave in the same way.

Redirect Examination

By Mr. Elliott:

Q. There were two matters which I overlooked asking, Professor Teller, and I did not discover them until Mr. Butler began his examination. I want to ask them from you at this time. Have you ever given bread made from bleached flour, and giving this nitrite reaction, to a person, and then ascertained what became, or rather ascertained if there was
1980 a disappearance of that nitrite reacting material from the stomach of the person? A. I have.

Q. Will you please tell us what that experiment was, and the result of it?

A. Bread containing nitrites made from bleached flour—bread made from bleached flour, and containing some nitrites, were eaten by a young person under my observation, and I was present where a physician—not myself, except that I helped to work the stomach pump,—pumped out the gastric juice, at the end of one hour's time and applied the Griess test. I applied the Griess test, to the material which was obtained.

Q. With what result?

A. With the result of no pink color appearing.

By Mr. Butler:

Q. How long in the stomach? A. One hour.

By Mr. Elliott:

Q. Did you ascertain the amount of nitrite reacting substance in the bread?

A. That was one made especially. I think it contained about three-tenths of a part per million.

Q. Three-tenths of one part per million?

A. Yes, using the shortest fermentation possible.

Q. Have you made any examination of the flour that was seized in this case, to ascertain the presence or absence of free nitric acid?

A. I have made tests—other tests for free mineral acids, and obtained none.

Q. I will ask you if, in your judgment, it is possible for free nitric acid to be present in flour bleached by this Alsop process?

A. It is not possible for it to be present, as free nitrous acid, or nitric acid.

Q. Now, I will ask you to assume, Professor Teller, that, when the flour is bleached by this Alsop process, that the gaseous medium employed, when brought in contact with the flour, splits up into equal parts of nitrous acid and nitric acid. Just assume that. Now, under that assumption, I will ask

you if in your judgment any free nitric acid could remain in the flour.

1981 A. I will answer that by an experiment which I made on bread.

Mr. Butler: I will object to it being answered in that way.

By Mr. Elliott:

Q. Just answer the question, first. A. Sir?

Q. Assuming that.

A. In my opinion it could not. I see the question.

Q. How did you demonstrate that?

A. Demonstrated it by making bread, containing nitrous and nitric acids, and found no increased acidity in the bread, over what was normally present in a similar bread made from unbleached, or flour which contained no nitrous or nitric acid.

Recross Examination

By Mr. Butler:

Q. You say, on this experiment, you took bread containing nitrites?

A. Containing this material that we inadvertently speak of as nitrites. I guess you got me on that point, because I don't mean it, at all.

Q. You really mean a nitrosite?

A. I really mean the one we have been calling the nitrosite.

Q. You really mean the nitrosite? You resented my use of the word "nitrite" since lunch, I believe.

[Q.] We understand ourselves, I believe.

Q. If you put some hydrocyanic acid in food, and have somebody eat that food, and then pump out the stomach, do you think you would get the hydrocyanic acid back, if it had been in the stomach for two minutes?

A. I cannot say how long it might be there.

Q. Most all poisons would get off into the blood very quickly, wouldn't they?

A. That would depend on circumstances.

Q. Depend on the poisons, would it?

A. Depend on how soluble they were.

Q. Now, do you suppose that this nitrosite terpene

1982 would get off in the blood pretty quick?

A. I don't know how long it would take them. I know the saliva contains nitrites, and that there was none of that, even, there, when we pumped it out.

Q. So, you don't know how quickly it strikes into the blood.

A. No, we could not tell that.

Q. Nor what it does when it strikes the blood?

A. We would have to carry on an innumerable number of experiments to show how quickly it would get into the blood.

Q. It gets in very quickly?

A. I doubt it, because it takes some little time to dissolve it out, and some little time for it to diffuse.

Q. A drop of prussic acid on one's tongue will kill a man quicker than a poniard through the heart, won't it?

A. It is very quick, in that case.

Q. Some of these poisons act quickly, don't they?

A. Although it is present in some drinks.

Q. Probably a drop of concentrated nicotine on the tongue of a dog, will kill it quicker than if he was shot?

A. Might kill him very quick.

Q. You don't think you would pump very much of that out of his stomach, do you? A. I would not try it.

Witness Excused.

Mrs. P. L. Williams, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Scarritt:

Q. You never were on the witness stand before, were
1983 you, Mrs. Williams? A. No, sir.

Q. Where do you live, Mrs. Williams?

A. In Kansas City, Missouri.

Q. How long have you lived here?

A. Fifteen years.

Q. What is your business? A. Restaurant.

Q. Do you own and run a restaurant, here, in the New York Life building? A. Yes.

Q. How long have you been running that restaurant?

A. I have been in the New York Life building over eight years, and I was in business at 518 Delaware, too.

Q. You have been in the New York Life building restaurant, there, for eight years?

A. Over eight. We are in our ninth year.

Q. And how long on Delaware street, before that time?

A. Between three and four years.

Q. What was your occupation before that time?

A. Working in a restaurant, before that time.

Q. How long have you worked in the restaurant business, during your life?

A. About twenty years.

Q. From the time you were a little girl?

A. Yes, sir.

Q. Now, how many people do you feed down there at the New York Life building, at a meal?

A. We will average eleven hundred.

Q. Eleven hundred? A. Yes, sir,

Q. Eleven Hundred? A. Yes, sir.

Q. Noon meal?

A. Yes, sir. That is counting all our meals. Some days, of course, we don't run that, and other days we run over, and it will average eleven hundred, the year round.

Q. Eleven hundred a day, the year around?

A. Yes, sir.

Q. Are those customers of yours, or the general public, men from the offices, clerks, and merchants?

A. Yes, sir.

Q. Lawyers, doctors, and all sorts of people?

A. Yes, sir.

Q. Ladies and children, are they?

A. Yes, sir. Of course, we do not have many children.

Q. You have a great many ladies, have you? A. Yes.

Q. And young girls? A. Yes.

Q. People from the offices? A. Yes.

Q. Now, have you had any experience in making bread?

1984 A. I always made all my own until the last year or so, and I do, now, sometimes, if I am short of help, I will go in and make it.

Q. But, up to within the last year, you have done all of your own cooking, haven't you?

A. The last year or two. It has been about two years since I quit making bread, altogether.

Q. Your place, down there, is very popular on account of the bread you make, isn't it?

A. We always have good bread.

Q. Have you used bleached flour in making your bread?

A. Yes.

Q. From what mill or mills?

A. I can tell you the name of the flours, but I dont know what mills they are from. The bleached flour we are using now is the Southwest Milling Company.

Q. That is the "Aristos" flour?

A. Yes. We are using that, and have used it for 'most three years.

Q. And have used it for 'most three years?

A. Yes.

Q. And did you ever use the Bulte flour,—Bulte mills?

A. Yes, I have used it.

Q. And did you ever use any other flour?

A. I have used the Mosier flour, for two or three years.

Mr. Lyons: Who is that?

Mr. Scarritt: That is Mosier, of Great Bend, Kansas.

Q. Now, just tell the jury, Mrs. Williams, in your own way, whether or not there is any difference in the bread making

qualities of the bleached flour that you have used, from that of the unbleached flour.

A. The bleached flour makes the best bread.

Q. The bleached flour makes the best bread?

A. Yes.

Q. Did you find that true, in using the "Aristos" flour?

A. Yes, because, if we get new flour, and it is not bleached, it does not make as good bread as it does if it is bleached.

Q. Is it the same, or better, in quality and strength, as the unbleached flour?

A. Well, it makes lighter bread.

Q. Makes lighter bread?

A. And it makes it whiter.

Q. Makes whiter bread? Is it the same in volume and loaf? A. Yes.

1985 Q. Does it dough as well?

A. Doughs better, and it is better to handle. Any one can tell, when flour is new, that is used to mixing dough, whether it is bleached, if it is new.

Q. If I understand you, the new flour, bleached, is better than the new flour unbleached.

A. Oh, yes, much better.

Mr. Butler: I will object to that as leading.

Mr. Scarritt: I understand, I was just summing it up.

Mr. Butler: Yes, I understand you just wanted to tell it, yourself.

Mr. Scarritt: Yes, to see that I understood it.

Q. Now, in reference to unbleached flour, you may state whether or not it has better bread making qualities than the bleached flour.

Mr. Butler: I object to that. The witness has not shown herself competent to testify generally.

The Court: She may answer it.

By Mr. Scarritt:

Q. Whether any bleached flour has better bread making qualities than the same flour, unbleached. A. Yes.

Q. Did you make any bread out of the flour that was seized in this case, at my request? A. Yes, sir.

Q. (Handing a loaf of bread to the witness) Is that the loaf of bread you made out of the seized flour?

A. Yes, sir.

Q. When did you make that?

A. This morning.

Exhibit referred to was then marked by the reporter "Claimants' Exhibit 265".

Q. Did you make that in just the ordinary way that you make all your bread? A. Yes, sir.
Q. Put anything more or less in it, than you do your ordinary bread?
A. Nothing more, at all.
Q. Just what you use there in the restaurant?
A. Yes, sir.
Q. Did you make any rolls out of the flour?
A. I did. (referring to Exhibit 265) Shall I cut it?
Q. Yes. A. (Witness does so.)
Q. Are these the rolls that I hold in my hand, that
1986 you made out of the Lexington bleached flour, the flour that was seized in this case? A. They are.

(Exhibit referred to marked by the reporter "Exhibit 266".)

Q. When did you make these? A. This morning.
Q. Now, did you make any rolls out of the bleached "Aristos" flour, that you had? A. Yes, sir.
Q. Are these the rolls you made out of the bleached "Aristos" flour? A. Yes, sir.

Exhibit referred to was then marked by the [by the] reporter "Claimants' Exhibit 267".

Q. Did you ever have any complaint in your restaurant down there about bread made out of the bleached flour?

Mr. Butler: I think we will object to that as immaterial.

The Court: Sustained.

No cross-examination.

Witness excused.

Herbert W. Emerson, called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:
Q. State your full name. A. Herbert W. Emerson.
Q. Your residence? A. Lawrence, Kansas.
Q. What is your profession?
A. I teach physiological chemistry at the University of Kansas.
Q. Will you please state your qualifications, Professor Emerson?
A. I graduated from the University of Michigan in 1901, and again in 1902. I did post-graduate work there, in 1903,

and held the Park-Davis scholarship. In the fall of
1987 1903, I came to the University of Kansas, as instructor in physiological chemistry. In 1905 as assistant professor of physiological chemistry, and, since 1907 have had charge of the physiological chemistry at the University of Kansas.

Q. Do you belong to any of these learned societies we have heard about?

A. I belong to the American Medical Association, American Pharmaceutical Association, Kansas Academy of Science, American Association for the Advancement of Science.

Q. Now, what is physiological chemistry?

A. Physiological chemistry is the study of the animal body, and the normal changes taking place during metabolism.

Q. Now, you might explain what metabolism means.

A. Well, metabolism is the changes which take place in the breaking down of foods, and the building up of the body—the normal changes of life.

Q. Have you done any work on bleached flour?

A. Yes, sir.

Q. What is the nature of the work you have done, Professor?

A. I have carried out a number of experiments on the digestibility of bleached flour.

Q. Now, will you please state what these experiments were?

A. I took two per cent solutions of bleached and unbleached flours, and first ran experiments with the pancreatic digestion, by adding to one hundred c.c. of the two per cent solutions, ten c.c. of pancreatic solution, containing 0.3 grammes of pancreatin. I watched the course of digestion, by taking out from this digestion mixture, which was kept about body temperature by means of an asphalt thermostat, at intervals of about ten minutes, two c.c. of the digestion solution, and adding it to Nessler's tubes, containing fifty c.c. of water and one c.c. of N/10 iodine. Starch, in the presence of iodine, gives a blue color. As the digestion proceeds, and [dextaerine] is formed, you get a reddish color, and, as that starch is further hydrolized into sugars, the color disappears. I watched the rate of digestion, by comparing the colors at different intervals, and could distinguish no difference in the rate of digestion between the bleached and unbleached flours.

1988 Q. Now, what flour did you have in those experiments.

A. This was flour from the Larabee Mills.

Q. Did you ascertain the nitrite reacting content of that flour? A. Yes, sir.

Q. What was it?

A. The unbleached flour contained no nitrite reacting material. The bleached flour contained one part per million nitrite reacting material.

Q. I don't know if I asked you, but if I did, I will ask you again, as a result of that experiment, what is your opinion as to whether digestion of the bleached flour, or the bread from the bleached flour—which was it you used?

A. In these experiments I just described, it was all on bleached flour.

Q. On the flour, itself? A. Yes, sir.

Q. I will ask you, as a result of that experiment, did you observe any retardation of the digestion of the bleached flour, as compared with the unbleached?

A. No, sir. I determined no retardation in the digestion.

Q. Did you make any quantitative determinations as to the extent of digestion? A. Yes.

Q. What were they, and what were the results of those quantitative determinations? First, tell us what they were, and what the results were.

A. I carried on experiments similar—practically the same as these—just the same as these—for definite intervals of time, and then filtered the two solutions, and determined the sugar—I filtered the two solutions, and made up the filtrate, to the same volume, one hundred c.c.—I determined the sugar in an aliquot portion of the filtrate.

Q. What did that disclose?

A. The amount of sugars in the two were the same. That is, there was more sugar at one time, in the unbleached, and, on other experiments, slightly more in the bleached, so that I could not determine from these quantitative experiments any difference in the rate of hydrolization.

Q. By hydrolization—does that mean the conversion of the starch to sugar? A. Yes.

Q. Did you make any other quantitative determinations?

A. Yes. Filtering the solutions—I filtered them through dry washed—through washed, dried and weighed filter
1989 papers, and weighed the residue—dried and weighed the residue.

Q. What was the result of that test?

A. The residues were the same—practically—were the same.

Q. Have you carried on any experiments to determine the effect of digestion upon these nitrite reacting material?

A. Yes.

Q. What were they?

A. The experiments were, first, in pepsin, and we found that the nitrite reacting reacting material disappeared in from one-half to about one hour.

Q. Just tell us a little more in detail, now, Professor, what you did,—what you used.

A. Well, I used the bleached flour, and added to it ten c. c. of pepsin solution, containing—that solution contained 0.5 per cent pepsin, and then digesting this, at body temperature, testing for nitrite reacting material every fifteen minutes. We found it disappeared in from thirty minutes to an hour and a half, and, in some cases, it disappeared in thirty minutes, and others it took longer.

Q. Did you make any with pancreatin? A. Yes, sir.

Q. Tell us about these.

A. The digestion experiments with pancreatin were very different in character. Sometimes—the first experiment with the pancreatin—in the pancreatic digestion, the nitrite reacting material disappeared very rapidly. Subsequent experiments, it disappeared very slowly, if at all.

Q. Now, I will ask you what deductions do you draw from these experiments?

A. That some way in the processes of digestion, the nitrite reacting material disappears.

Q. Have you made any experiments to determine the presence or absence of inorganic nitrites in flour? A. Yes, sir.

Q. I meant by flour, flour that had been treated by the process. Please detail these experiments. Tell us what they were.

A. I took bleached flour solution, twenty grammes, added fifty c. c. of water, allowed it to stand for one hour, tested it, by adding potassium iodide, starch paste solution, and
1990 five c. c. of N/10 acetic acid. I could get no test, for nitrites. I repeated the experiment, using, in place of N/10 acetic acid, N/10 hydrochloric acid, and I got a positive reaction.

By Mr. Butler:

Q. Got the reaction for what?

A. Liberation of iodine for nitrite.

By Mr. Butler:

Q. The nitrite reaction?

A. Yes, sir. Liberating iodine, and coloring the starch paste blue. I then repeated the experiment—I then tried an experiment to determine the delicacy of potassium iodide, starch paste, and sodium nitrite. I found it to react—with N/10 acetic acid—and found it to react with one part in fifty million. That is, one part of nitrite, in dilutions of fifty million. part sodium nitrite dilutions of fifty million.

Q. Then, let me ask you this—

A. (Interrupting) Well,—

Q. (Interrupting) Go ahead, if you have not finished.

A. Perhaps that leaves it rather indefinite. My conclusion from this would be that there were no inorganic nitrite reacting materials in the flour.

Q. Is that test that you employed, one which would have disclosed the presence of an inorganic nitrite, if it had been in the flour? A. Yes, sir.

Q. Now, would these tests also show the presence of free nitrous acid? A. Yes, sir.

Q. If it existed in flour bleached by this process?

A. Yes, sir.

Q. And what is your statement as to the presence of free nitrous acid?

A. There could be no free nitrous acid in the flour which I was working with.

Q. Now, as the result of these experiments, I will ask you what your conclusion is, as to the presence or absence of inorganic nitrites, or free nitrous acid, in flour bleached by the Alsop process.

A. That there were no free nitrous acids or inorganic nitrites in the flour which I analyzed.

1991 Q. Now, have you performed any experiments to determine if there is any free nitric acid present in flour bleached by the Alsop process? A. Yes, sir.

Q. Please tell us what these experiments were, and with what results.

A. The experiments consisted of adding one per cent nitric acid to flour contained in a mortar, and titrating and adding Troepper's reagent, dimethyl-amido-azo-bensol, which gives a red color with inorganic acids, and I could get no free acids, until I had added about one part of acid to two hundred parts of flour—one to two hundred.

Q. How was it that you could get no—

A. (Interrupting) I could get no positive reaction. That is, no red color, for free nitric acid, until I had added one part of acid to two hundred parts of flour.

Q. Now, let me see if I understand that. Did you try this reaction with the bleached flour?

A. Yes, sir. This was with the bleached flour.

Q. And did you state the result of that?

A. No, I did not. I could get no reaction for nitrous acid, with Troepper's reagent.

Q. Then you kept on adding nitric acid. Is that it?

A. Yes.

Q. Until you added it to the proportion of one to two hundred of the flour? A. Yes, sir.

Q. And in that proportion, you say you did get the reaction?
A. Yes, sir, did get the positive reaction.
Q. Professor, have you conducted any experiments to determine the relative digestibility of flour made from bleached and unbleached flour? A. Yes, sir.
Q. Please tell us what these were.
A. These experiments consisted in grinding the bread up, and breaking it, getting it into small pieces, and then the digestion experiments, as I described previously, the experiments were just the same.
Q. That is, you repeated the same experiments with the bread, ground up, as you did with the flour?
1992 A. Yes, sir. The pancreatic juice, and also with saliva.
Q. Have you noticed any foreign odor to flour bleached by the Alsop process? A. No, sir.
Q. Have you examined breads, I mean, made from bleached and unbleached flours, to see if there was any difference in the taste and smell of these breads? A. Yes, sir.
Q. What is your opinion in that regard?
A. I cannot distinguish any difference in the taste, odor or appearance except in the color, between bread made from the two flours.
Q. Have you made any experiments to ascertain what effect nitrites taken internally, have on the blood, as to the formation of met-hemoglobin?
A. Yes, sir. I have taken, in three-grain doses, at one hour's interval, as much as nine grains of sodium nitrite.

By Mr. Scarritt:
Q. Who has done it? A. I have.

By Mr. Scarritt:
Q. Oh, you have, yourself?
A. Yes, sir. And tested the blood for met-hemoglobin, and could find none.

By Mr. Elliott:
Q. What is the test that you made for the presence or absence of met-hemoglobin?
A. I took some blood from my finger, with the Thoma-Zeiss hemacytometer, mixed with physiological salt solution, and examined it by the spectroscope.
Q. Did you take this—what was it you took—sodium nitrite? A. Yes, sir.
Q. Did you take this more than one day?
A. Yes, sir, I took it on two days.
Q. In succession?
A. Yes, sir. In the mornings of both days.
Q. How much did you take the first day?
A. I took nine grains each day.

Q. Nine grains on each of two days? A. Yes, sir.
Q. Eighteen grains in the two days? A. Yes, sir.
Q. I will ask you if you felt any ill effects, or otherwise, from the taking of this amount of nitrite.
1993 A. No, sir. I could not observe any effects.

Cross-Examination

By Mr. Butler:

Q. From your last experiment, Doctor, would you have us understand that it is your opinion that nitrite of sodium will not produce met-hemoglobin in the blood?

A. In any quantities, do you mean?

Q. Well, leave my question as it stands.

A. And do you mean taken into the body, or outside, in the test tube?

Q. I mean taking it into the stomach of human beings.

A. No, I know that nitrites will produce met-hemoglobin. I do not know in how large quantities it must be taken to produce met-hemoglobin.

Q. You know it is the learning of the medical profession, ever since the salt, nitrite of sodium, was known, that it will and does, by direct and immediate chemical action, change the hemoglobin into met-hemoglobin, when taken by the stomach, don't you?

A. I don't know of any cases of met-hemoglobin. I know that—

Mr. Butler: (Interrupting) I move to strike out the answer as not responsive.

The Court: Yes, that is not an answer.

By Mr. Butler:

Q. I am asking for the learning of your profession upon that subject, and the medical profession.

A. Well, I am not sure that I can answer you accurately. I know that—

Q. (Interrupting) I know you are not a doctor?

A. No, sir.

Q. But, is it not your understanding and is it not laid down by Cushney, and everybody else who has ever writen upon the subject, that nitrite of sodium, and other nitrites, do change the hemoglobin into met-hemoglobin?

A. I believe that is the case, yes.

Q. And when the hemoglobin is changed into the met-hemoglobin, its power of carrying oxygen from the lungs to the tissue is destroyed? A. Yes, sir.

1994 Q. So that the effect of that particular nitrite, at least, is, to the extent that it changes the blood, injurious, in that it deprives the blood of its most important function? Isn't that true, Doctor?

A. I don't know that small quantities—
Q. (Interrupting) To the extent, I said.
A. To the extent?
Q. Yes. A. That met-hemoglobin is formed?
Q. Yes. A. Yes, sir.
Q. To the extent? A. Yes, sir.
Q. So that, as a physiological chemist, I may say that if a single red corpuscle of my blood be so changed that the hemoglobin therein be made met-hemoglobin, the function of that corpuscle is destroyed? A. Yes, sir.
Q. My blood is robbed to that extent? A. Yes, sir.
Q. My blood is poisoned to that extent?
A. I am not a toxicologist.
Q. Well, it is a foreign substance in the blood stream, isn't it? A. Met-hemoglobin is, yes, sir.
Q. Objectionable, and injurious, if in sufficient quantities—if in sufficient quantities?
A. I should say that I do not know that it is injurious.
Q. Why, it will strangle a person by suffocation, give them cyanosis, and the body, at post mortem, will be exactly as if the person had been smothered between two feather ticks, won't it, or choked to death?
A. If all the blood is used up in the met-hemoglobin.
Q. If done to death, I say. A. Yes.
Q. And when it has done them to death, it is simply changing corpuscle after corpuscle, until the whole blood stream is ruined, isn't it, until the hemoglobin therein is changed to met-hemoglobin? A. Until sufficient is changed to cause death.
Q. How is that?
A. Until sufficient is changed to cause death.
Q. Yes, until sufficient is changed to kill? That is the truth, isn't it? A. Yes.

1995 Q. Now, as a physiological chemist, you will say that anything added to our food, whether it be a nitrite, a terpene, or poison, that strikes down our blood and deprives it of power to carry oxygen to the tissue, is wrong, and injurious to the food, won't you,—injurious to health?

Mr. Scarritt: We object to that as invading the province of the jury, asking the witness for a conclusion that invades the province of the jury.

The Court: He may answer.

Mr. Scarritt: We save an exception.

The Witness: Will you please read that question?

(Last question read.)

By Mr. Butler:

Q. And also injurious to health—it injures the food, and injurious to health, if it destroys our blood, will it not?

Mr. Scarritt: Same objection.

A. If the assumption is correct,—that is, if it injures the food.

By Mr. Butler:

Q. If it injures the blood, you mean?

A. And destroys health, it should not be added.

Q. Oh, no. A. I am not sure I understand the question.

Q. If it injures the blood, so that it destroys its power to carry oxygen, it injures health, does it not?

Mr. Scarritt: Same objection.

The Court: He may answer.

Mr. Scarritt: We except.

Witness: Will you please read the question?

(Last question read by the reporter.)

A. I will answer that yes, and then I would like to explain. If it was added in sufficient quantities, that is.

By Mr. Butler:

Q. Yes. A. Yes, sir, that is true.

Q. It might be in so minute a quantity—

A. (Interrupting) As not to effect.

1996 Q. (Continuing) —as not to prevent any observable effect, might it not?

A. Yes, sir, and, in my opinion, it would not produce any effect.

Q. Will you say that, if one molecule of the oxygen carrying portion of my blood be destroyed, that I am not, pro tanto, thereby injured?

Mr. Scarritt: Same objection.

The Court: He may answer.

Mr. Scarritt: We except.

A. Yes, sir. But, I don't believe—

By Mr. Butler:

Q. (Interrupting) Wait a moment. You will say I am not injured, or that I am? A. No, sir. I will say you are.

Mr. Scarritt: Let him explain.

By Mr. Butler:

Q. Yes, sir.

A. But I do not believe that small quantities of sodium nitrite gets into the blood stream, at all.

Mr. Butler: I move to strike out what he thinks about sodium nitrite.

The Court: That may be stricken out.

Mr. Scarritt: We except.

By Mr. Butler:

Q. The Larabee flour is known to you, is it not, to be the best milled flour in Kansas?

A. I don't know very much about flour.

Q. It is known to you to be the most lightly bleached flour in Kansas, is it not?

A. No, I haven't—I don't know. I don't know about the flours of Kansas, at all.

Q. Did you use flour that was milled the same day?

A. I used flours, that, by analysis, indicated them to be the same.

Mr. Butler: I move to strike that out.

The Court: Yes, sir, that is not an answer.

By Mr. Butler:

Q. Do you know whether the unbleached flour was free
1997 from nitrite reacting material? A. Yes, sir.

Q. As far as you know, it was a new flour, just milled?

A. I don't know anything about that.

Q. Well, now, if it was a new flour, just milled, when you compared it with the bleached flour, you were comparing what has been called a "artificially aged" flour with a brand new flour, weren't you?

A. Well, if that is true.

Q. Yes, if that is true. A. Yes, if that is true.

Q. Now, you know, do you not, that natural aging of good, wholesome flour, such as Larabee makes when he is doing his best—I am not sure he always does his best—you know that that is improved with aging, don't you, and becomes blander, and more nutritious, more gracious, with better flavor, and digests better?

A. No. I would rather say I did not know, because I don't know about these things.

Q. Well, is it not within your knowledge that natural aging improves digestibility of flour?

A. Yes. That is my impression, but I could not prove it.

Q. So that, if you take a fresh flour, and then bleach it, and they are just alike, that demonstrates, does it not, that

the bleaching does not improve digestibility of the flour, if you get the same results? A. Yes, sir.

Q. Now, I only want to refer to one of your experiments, and that was the experiment which had to do with the digestibility of the nitrite reacting material. Had you learned to call that by the name of "nitrosite terpene" or "terpene", or "terpenic nitorsite"?

A. No, sir.

Q. You never heard it called that name?

A. I have never called it as such. I have heard of it.

Q. Are there bacteria, which will nitrify nitrite, and change them into nitrates? A. Yes, sir.

Q. Did you chloroform the bacteria?

A. No, sir, but I ran the tests, which are made up the same.

Q. Yes, but the bacteria were working in both?

A. Yes, sir. The one case, just with the flour in water, the other, with the pepsin in water, and the other with
1998 with the pancreatin in water, and it disappeared most readily from that with the pepsin in the water.

Q. How is that?

A. The nitrites disappeared most readily—

Q. (Interrupting) Well, I know, but the bacteria were at work, were they not?

A. All of them, I presume.

Q. The nitrifying bacteria.

A. I presume they were working in them, all just alike.

Q. Now, nitrifying bacteria are well known to agriculturists, are they not? A. Yes, sir.

Q. They are the things which change the nitrites in the soil into nitrates, that plants may live? A. Yes, sir.

Q. On the nitrates? A. Yes, sir.

Q. And the nitrifying bacteria are being produced for that very purpose, are they not?

A. I understand so.

Q. In the agricultural department of the University of Kansas?

A. Yes, sir. I understand so.

Q. Now, this digestion test took place in an open beaker?

A. No, sir, in a closed, Erlenmeyer flask.

Q. Was it exposed to the atmospheric air?

A. That was a one hundred c.c. Erlenmeyer flask. They hold a little more than one hundred c.c., so, there was a little air over it.

Q. Did you have it stoppered tight? A. Yes, sir.

Q. Did not blow out the stopper? A. No.

Q. No gases formed?

A. Not sufficient to blow out the stopper.

Q. What did you stopper it with?

A. With a cork stopper.

Q. Well, that, of course, is not hermetically sealed, in chemistry? A. No, sir.

Q. You know that these nitrates have great avidity for oxygen, and then change to nitrites, don't they?

A. Yes, sir.

Q. That is, take nitrite of sodium?

A. Well not so much. I don't know about that. Sodium nitrites, I think changes slowly. I don't know how rapidly.

Q. And, after they have been changed by oxidation, to nitrates, you could eat a whole handful, couldn't you?

A. I don't know.

1999 Q. But nine grains did not even produce any action, even of a medical character, upon you?

A. Not that I could determine.

Q. Seemed just as harmless as would so much corn meal?

A. I think so.

Q. Not nearly so harmful as so much flour, Doctor?

A. Oh, I think they would both be practically harmless. I could not say. I did not notice any effect.

Redirect Examination

By Mr. Elliott:

Q. Is the flour that you used in your digestion work the same flour Professor Sayer used, do you know?

A. Yes, sir.

Recross Examination

By Mr. Butler:

Q. By the way, when did you make these acid tests, to find free nitric acid, and free nitrous acid?

A. I think I made these experiments a week ago today.

Q. That was since Dr. Hulett testified here, wasn't it?

A. I don't know when Dr. Hulett testified.

Q. You heard of his testimony, here, didn't you, before you made the tests?

A. No. I am not sure. I heard about Dr. Hulett's testimony sometime in the last week. I am not sure whether I heard it before.

Q. Now, I think I will ask you one or two questions that I like to have the opinion of scientific men on, generally, especially from the University of Kansas. Now, without quibbling about quantitities very much, some substances are, by nature, popularly know to be poisonous substances, are they not?

A. That is my impression, yes, sir.

Q. And others are popularly known to be foods?

A. Some.

Q. And harmless? And, ordinarily, it is not good English to call wholesome food poison? A. No.

Q. Is it, Professor? A. Not in ordinary quantity.

2000 Q. Not out of the laboratory? Now, we had Professor Sayer, here you and he, I believe, are with the same institution, and are associated in your work, are you not?

A. Yes, sir.

Q. Same department? A. Yes, sir.

Q. Professor Sayer tells us that the oxides of nitrogen, N2O3, the trioxide, NO2, the peroxide, and HNO2, the nitrous acid, and HNO3, the nitric acid, belong to the poisonous group, that were, generally speaking, poisonous substances, by nature. Are you of that same opinion?

A. Yes, I think I am.

Q. Now, Professor, without getting into the fine distinctions about quantities, and so forth, let me see if I can get your opinion on this. May food, like flour, or bread, or pancakes, or dumplings, or gravy, or crackers, or biscuits—any of the food stuffs made from flour—from wheat flour—be rendered injurious to health by the addition thereto of, or the treatment thereof with nitrogen peroxide gas, nitrogen trioxide, nitrous acid, or nitric acid?

Mr. Scarritt: We object to that as invading the province of the jury, and calling for a wrongful conclusion of the witness, because the witness has not qualified.

The Court: He may answer.

By Mr. Butler:

Q. I am not dealing with quantities, now. I am trying to get at the nature of the substance.

A. Will you read the question, please?

(Last question read by the reporter)

A. I could not answer that, without taking into consideration the quantity.

Q. Well, in appropriate quantities, then, we will say, of each.

A. And what may I understand, please, by "appropriate"?

Q. Well, any reasonable quantity.

A. That is not any more definite, to me.

Q. Well, I will withdraw that question, and make a very simple one. A. All right.

Q. May food made from flour be rendered injurious to health by adding nitric acid thereto?

2001 Mr. Scarritt: Objected to for the same reason.

The Court: He may answer.

Mr. Scarritt: We except.

A. Any amount of nitric acid?

By Mr. Butler:

Q. Any amount, I don't care whether it is big or little. In other words, can I spoil food with nitric acid?

A. Oh, yes, sir.

Q. You're right I can. I can spoil it badly. So I may with nitrous acid? A. Yes, sir.

Q. So I may with NO2 gas?

A. You may be able to spoil it, yes.

Q. And so I may with N203, whether it be gas or liquid?

A. Yes, sir, you are able to.

Q. Do you happen to know that it does not exist in a gaseous state as laid down by all chemists of the world?

A. Yes, sir, I understand that.

Q. You understand that it does not exist as a gas?

A. Yes.

Q. That is, the nitrogen trioxide—N203. You so understand it, do you not?

A. That is my impression. I don't know whether I am right about that or not. I don't know.

Q. Now, let us assume, for example, that five horse-power of electric current, from this flaming arc, will produce, in a year, seven thousand pounds of nitric acid, and a like amount of nitrous acid, and that the same are introduced into the flour product of a mill, which is two hundred barrels a day, and let us assume that, reducing that to a barrel, there would be one-tenth of one pound of nitrous acid, and one tenth of one pound of nitric acid added to each barrel of flour, while in a state of great agitation, so as to mix it up, well; now, that one-tenth of a pound would be about like this, which is marked "Exhibit 20" —being that much full of nitrous acid, and another one like it, full of nitric acid. I want to ask you whether or not you think those two acids would have any effect upon the flour.

Mr. Scarritt: We object to that, if Your Honor please, incompetent, irrelevant and immaterial, not being based upon the evidence in this case, and leaving out evidence that
2002 bears upon the subject, and introducing evidence, himself, that is not on the record.

The Court: He may answer.

A. One-tenth, as I understand it?

By Mr. Butler:

Q. Yes, it would be thirty cubic centimeters of nitrous acid, and the same amount of nitric acid, commingled with a

barrel of flour, and the question is, do you think it would have any effect upon the flour?

A. Yes, sir. It would have an effect.

Q. A good effect, or a bad effect?

A. I believe that it would aside—well, I would rather say that I am not competent to answer that.

By the Court:

Q. Sir? I did not hear you?

A. I am not competent to answer that.

By Mr. Butler:

Q. As a physiological chemist, you do not believe, in your heart, that the adding of three and one-half tons of nitric acid, and three and one-half tons of nitrous acid to the output of a mill, making flour at the rate of two hundred barrels a day—do you not think these acids would injure the flour made by the mill?

Mr. Scarritt: Same objection, if your Honor please.

The Court: He may answer.

Mr. Scarritt: We except.

A. Well, would these acids be all absorbed?

By Mr. Butler:

Q. Commingled with the flour, in a state of agitation. I think it would make poison in it, if you want to know my view of it—the worst kind of poison.

By the Court:

Q. Go on and answer it, Mr. Witness.

A. I would rather say I am not competent to answer that. I would like to figure it out.

2003 By Mr. Butler:

Q. Can you think of any quantity, then, that would be large enough if sixty-eight cubic centimeters of two acids, nitrous and nitric acid, would not injure a barrel of flour, if mixed with it, and commingled with it? Can you think of any quantity of poison, at all—

A. (Interrupting) I think if that was all absorbed, that it would be poisonous. I think it would be deleterious to health. I would rather state it that way.

Q. That it would injure health?

A. That quantity, all absorbed.

Q. And that it ought to be kept out of the flour, on account of the health of the people, wouldn't you say?

Mr. Scarritt: We object to that for the same reasons, if Your Honor [—], that it is more argumentation.

A. (No response.)

Mr. Butler: All right. I will withdraw the question, Doctor. We will not have any trouble about that at all. I will withdraw it.

Witness excused.

Penton Dales, being called as a witness on behalf of the claimants, being first duly sworn, was examined, and testified as follows:

By the Court:

Q. What is your name? A. Penton Dales.

Q. Where do you reside? A. Lincoln, Nebraska.

Direct Examination

By Mr. Elliott:

2004 Q. I believe you are not a doctor of medicine.

A. I am not a doctor of medicine, no, sir.

Q. I will ask you what is your profession, Dr. Dales?

A. I am a teacher of chemistry.

Q. Will you kindly state your qualifications?

A. I graduated with the degree B. S. C., at the University of Nebraska, '97. Had the scholarship there, for two years. Master's degree in '99. Scholarship in chemistry of Cornell, in '99-1900. Sage scholarship in chemistry, Cornell, 1900-1. Doctor of Philosophy, Cornell, 1901. Was Professor Dennison's private assistant, the work being largely analytical chemistry, from the fall of 1901 until February, 1903. February, 1903, I was given the research assistantship, and worked there at Cornell, and September, 1903, I was called to the University of Nebraska, as an assistant professor, and the work was analytical chemistry. At the present, I am professor of analytical chemistry and in charge of the department in the University of Nebraska.

Q. Have you done any work, as author, or editor, in connection with chemical subjects?

A. At the request of the Journal of the American Chemical Society, I prepared three extensive reviews, on analytical chemistry. I have written a number of papers on analytical subjects, and I am, at present, directing the research work of some graduate students, along analytical lines.

Q. Have you ever prepared any comprehensive publications dealing with recent conditions in analytical chemistry?

A. That was the three publications, at the request of the editor of the Journal of the American Chemical Society, was what I had in mind.

Q. Have you done any special work along the lines of agricultural chemistry? A. No, sir.

Q. Have you any special familiarity with bleached flour?

A. None, except that I have made a few purely analytical tests upon the flour.

Q. What tests, if any, have you made of the flour that was seized in this case?

A. I tested one sample of flour that was seized in this case, for free nitric acid.

2005 Q. For free nitric acid? A. Free nitric acid.

Q. What did you find as a result of your tests?

A. I found no free nitric acid in it.

Q. Are you positive that there was no free nitric acid in the flour?

A. I am positive that there was no free nitric acid in the sample of seized flour, nor in three other samples of bleached flour that I have tested.

By Mr. Butler:

Q. The three others were not of the seized?

A. No, sir. They were ordinary commercial products.

By Mr. Elliott:

Q. I understood Dr. Acree to testify, in answer to a question, which was, "Now, how did you demonstrate, if you did demonstrate, that the chemical action took place." And he said, "In the experiment with the nitric acid, corresponding to one hundred cubic centimeters of nitrogen peroxide per kilogram of flour, the temperature rose four and one-half degrees Fahrenheit. This is proof of the chemical reaction." The point is, I want to direct your attention to the rise in temperature, which he states is proof of the chemical reaction. I will ask you if you should spray unbleached flour with dilute nitric acid, and should obtain a rise in temperature, would you consider this proof of chemical action?

A. It is not proof of chemical action. It is evidence, but it is not proof.

Q. Why would you say that?

By Mr. Butler:

Q. It is evidence of it?

A. It is evidence of chemical action. It is not proof, nothing like it. Did you ask me why?

By Mr. Elliott:

Q. Why you would not consider this proof of chemical action.

A. A great many salts will dissolve in water, with a rise in temperature, and a great many—or, some salts will dissolve in water with a marked fall in temperature. Substances

like caustic potash, hydrochloric acid, and nitric acid,
2006 cause a marked rise in temperature, when they are diluted with water. That is the reason it is not proof. Those are not cases of chemical action.

Q. Have you made any spraying experiments, yourself?

A. I have, a few spraying experiments, that I would like to call to your attention, if I may look at this piece of paper, simply for the figures. Five hundred grammes of flour were sprayed. I sprayed five hundred grammes of flour with four cubic centimeters of water, three times is succession. I mean the same five hundred grammes of flour, sprayed that with four cubic centimeters of water, noted the rise in temperature; then, with four more cubic centimeters, and noted the rise in temperature, and then four more. In all I used twelve cubic centimeters of water sprayed into that flour. The initial temperature of that flour was 28.5 degrees Centigrade. After the first four cubic centimeters, it was twenty-nine and one-half, after the second four, it was thirty, and after the third four, it was 30.35 degrees Centigrade. That means that the twelve cubic centimeters of water gave it a rise in temperature of 1.85 degrees Centigrade, or 3.33 degrees Fahrenheit. Now, I tried five hundred grammes of bone-ash, in the same way, with water. Sprayed it with twelve cubic centimeters of water, in three separate amounts of four cubic centimeters. The initial temperature of the bone-ash was 29.8 degrees Centigrade. The rise on the first four cubic centimeters was 30.4. The rise on the second four cubic centimeters was to 30.6 and the rise, after the third four, was 30.85. That is, the total rise in temperature for the twelve cubic centimeters of water, in this case, was 1.05 degrees Centigrade, or 1.89 degrees Fahrenheit. Another case, five hundred grammes powdered charcoal were treated in the same way. The initial temperature was twenty-eight and one-half degrees, and the rises were to 28.6, to 30.1, and, the final four cubic centimeters did not increase that. After twelve cubic centimeters of water were added, the rise in temperature was 1.6 degrees Centigrade, or 2.88 degrees Fahrenheit. There, you have three, at least, cases of spraying with water, where the rise in temperature is certainly not because of the chem-
2007 ical action. It is not a case of chemical action, in the ordinary sense of the word.

Q. I understood Dr. Acree to testify as follows: "I took a sample of unbleached flour, and, as I say, sprayed the nitric acid into that concentration represented by one hundred cubic centimeters of nitrogen peroxide per kilogram of flour. That flour was bleached at once. I have the two samples, here, Mr. Butler." Now, I will ask you, have you sprayed any unbleached flour with dilute nitric acid? A. I have.

Q. Were you able to observe any bleaching effect?

A. I could not.

Q. I will ask you, do any of these flours which have been sprayed with dilute nitric acid, which you have sprayed with dilute nitric acid, I mean, show tests for free mineral acid?

A. They do not.

Q. What do you conclude from this experiment?

A. I conclude that the addition of nitric acid in the amount mentioned by Dr. Acree, and, for that matter, larger amounts that that, although there is a limit—larger amounts than that amount, will not show the presence of free mineral acids.

Q. Now, why not?

A. Because they will not respond. Samples that have been properly treated, and extracted, will not respond to the indicator, dimothyl-amido-azo-bensol, which is a test for the presence of free mineral acids, and nitric acid is one of these, and so is nitrous acid.

Q. Would the presence of the other substances, such as the phosphates, in flour, have anything to do with that question?

A. No, because—I say no, if you add enough nitric acid to convert all of your phosphates into nitrate, so that, on a test for free phosphoric acid, you would get your test, and that is what you would have to do to those things, to make them react for free mineral acids.

Q. But, in the amount that you have dealt with, it is your opinion is it, that no free mineral acids could exist in the flour?

A. I know there is none, if that test is trustworthy, and everybody considers that it is.

2008 Q. I also understood Dr. Acree to testify that there are, in the first place, acids formed by the action of this nitric acid on the flour, which generates more acids—that is, as I understand it. When you pour nitric acid on the flour, there are acids formed by this nitric acid, which generates more acids. Now, I will ask you, does spraying flour with a small amount of nitric acid, and allowing the mixture to stand, increase the acidity of the flour, if at all, sufficiently to enable it to be measured?

A. I may say that, within the limit of experimental error, it does not.

Q. Have you any figures on that?

A. I have some figures. I would like to put them on the board, back here. I do not suppose Mr. Butler can spare these, can he?

Mr. Butler: It took me so long, Doctor, to put that stuff on the board, I would hate to have it taken off.

A. (Continuing) I will try to read them slowly enough so you can get the hang of it, then. I took fifty grammes of unbleached and unsprayed flour. I extracted this, with five hundred grammes of cold water. Filtered that. Titrated one hundred cubic centimeters of the filtrate with tenth normal caustic soda, using phenol pthaline. Now, these one hundred cubic centimeters of the filtrate required, to neutralize the acids, the first time, one cubic centimeter of the tenth normal caustic soda. The second time, I tried it—that is, I ran another one hundred cubic centimeters. The second time it required .9 cubic centimeters of the caustic soda. Now, I took five hundred grammes of the unbleached flour, and sprayed that with four cubic centimeters of tenth normal nitric acid, which is the amount, approximately, comparable to your supposed one hundred cubic centimeters of nitrogen peroxide. Then, I took fifty grammes of that sprayed flour, extracted it, with five hundred cubic centimeters of water. One hundred cubic centimeters of this filtrate. Took fifty grammes of this sprayed flour extract, with fifty cubic centimeters of water; one hundred cubic centimeters of that required .9 cubic centimeters to neutralize the acids. Now, I let that flour
2009 that five hundred grammes which had been sprayed with nitric acid,—stand for two days. And, in two days I took another fifty grammes extracted with fifty cubic centimeters of water, filtered, and titrated one hundred cubic centimeters of that, twice. Then, I got one cubic centimeter and .95 cubic centimeters. Now, the average of my unsprayed and untreated flour was .95 cubic centimeters of caustic soda. The average on the sprayed flour, which stood for two days, was .975 of a cubic centimeter of tenth normal caustic soda. The difference between these two is twenty-five thousandths of a cubic centimeter, which is half a drop of [tense] normal sodium hydroxide. And you will find there are very few analytical chemists that will swear to a result that—

By Mr. Butler:

Q. (Interrupting) That is a small increase?

A. Is a very small increase, and one you cannot depend on. It might go down, just as well as it might go up. The point I want to make is this, that twenty-five thousandths of a cubic centimeter of tenth normal caustic soda is an amount that is within the limit of experimental error. And so it is.

[A.] Now, we have got the details of this experiment, and I want to see if I can get you, for the better understanding of these gentlemen to just put it in popular language. What it was you did.

A. The point is just this: The flour contains, among other things, certain organic gases. These organic acids may be neutralized by caustic soda. I use an indicator like phenol

pthaline, to tell you when the neutralization is complete. Now, the point in that experiment that I tried was, whether the addition of a small amount of nitric acid, and letting it stand for a couple of days, increases that acidity. Now, it does not increase that acidity.

By Mr. Scarritt:

Q. What kind of flour are you talking about?

A. I am talking about an unbleached flour, sprayed—one that I sprayed myself. It does not increase that acidity, certainly not beyond the limit of experimental error. That much I know about it.

2010 Q. I understood Dr. Acree to testify, also, to this effect: "it is a general truth in chemistry that, if you bring together two kinds of compounds which react with each other, they are going to react." I will ask you, is it a general truth in chemistry, that, if you bring together two substances which react with each other, they are going to react?

A. It is a general truth which needs, however, the very important modification of under the proper conditions. I can give you a good many examples of substances which are going to react under proper conditions, which do not react at all under ordinary conditions.

Q. I will get you to give us some of these.

Mr. Butler: I object to that as irrelevant and immaterial. Of course, everybody knows that chemical action will take place, and the conditions have something to do with it.

The Court: I will let him answer.

A. Such a case is the mixture of marsh gas and air in mines, which does not act unless some miner brings a fire along. Then, hydrogen and oxygen can be allowed to stand around indefinitely. They do not act, unless you bring a spark of fire, or a catalytic agent comes in contact with it. There are some cases, the reaction will act one way, while, under certain conditions, the reaction will be in the opposite direction.

Q. Now, can you give us an example of some reaction which will act one way, under one condition, and another, under other conditions?

A. There are two very simple ones. You take mercury, and heat it in oxygen, at a moderate temperature, and you get mercuric oxide, and you take your mercuric oxide and heat it a little hotter, and it goes back into mercury and oxygen again. Another case, is, barium oxide. Heat it in oxygen, at a moderate temperature, and it takes up the oxygen to form barium oxide. At still increased temperature, it gives off the oxygen, forming barium oxide, again.

Q. When Dr. Acree was testifying, he gave us some testimony which he supported by an illustration of what is called the acid chamber process, and, according to the transcript of his testimony which I have, he stated as follows:

2011 "Now, the air, itself, cannot oxidize the sulphurous acid readily enough to give you sulphuric acid in quantities which would make it a commercial process, so, we have to use in this form the oxidizing power of the nitrogen peroxide that I spoke of this morning. And, when we lead not only the sulphur dioxide and water, and the air in there, we lead in some nitrogen peroxide, too, and that then reacts with the sulphurous acid very readily, indeed. In this way H2O gives up one of oxygen, to H2SO3, and leaves NO, which is left to unite with the HNO3. Now, that takes place just as quickly as the nitrogen peroxide acts upon the flour, just like that. I am not giving you the details of this, gentlemen, because I do not see any use of going into that, but nitrogen peroxide oxidizes the sulphuric acid just as quickly as it is taken up by the flour, at once. Now, this oxygen monoxide can take up oxygen from the air instantaneously. Takes it up right at once, and forms again NO2, and that, again, oxidizes, forming H2SO3, and so small an amount of NO2 can cause the air—that is what it is ultimately—the oxygen, here—to change into HNO3. The NO2, then, is the catalytic agent." Now, I want to ask you, bearing of this testimony, first, what is a catalytic agent?

A. A catalytic agent is a substance which increases or decreases the speed of chemical reaction, without undergoing any apparent change, as a rule.

Q. I ought to have added this. Dr. Acree continued: "Now, in the same way, the nitrogen peroxide acts upon the flour, forms nitric acid, that acts upon the flour, too, in turn. Or NO2 is formed, as I have shown by experiment, and NO2, combined with water, forms nitric acid, and that acts upon the flour, and so it goes round and round and round, just exactly as this nitrogen peroxide goes round and round and round in the sulphuric acid industry." I will ask you, Doctor, if there are cases where the catalytic agent is actually, in part, lost or destroyed.

Mr. Butler: I think we will object to that as irrelevant.

The Court: He may answer.

2012 A. A case of the oxides of nitrogen, in the manufacture of sulphuric acid, is a case in point.

By Mr. Elliott:

Q. That is to say,—what is the catalytic agent, there?

A. The catalytic agent is invariably expressed in our texts as N2O3. It is, in all probability, a mixture of the various oxides of nitrogen, but it is expressed as N2O3.

By Mr. Butler:

Q. The mixture is undoubtedly NO and NO2, isn't it?

A. It is a problem that nobody has settled with absolute satisfaction, yet, just how much is N2O3, and how much is broken up. Some of it is unquestionably broken up.

By Mr. Elliott:

Q. Now, tell me if it is the accepted theory, at any rate, today, that NO2 acts in the way that I have read.

A. There is an error, by implication at least, in this testimony, if not one—

Mr. Butler (interrupting): Well, now, I think I will object to the reading of another man's testimony, to point out errors by implication as irrelevant and immaterial.

The Court: I do not see, myself, the point about that. I think I will allow him to go on, but there will never be any end to this, if every scientist, or so-called scientist, real or alleged, is to give us lectures and addresses upon the errors of others. The ordinary way is to state what is the fact, but, go on. Let us proceed. That seems to be the easier way.

A. (Continuing) The fact is, then, this, that Mr. Luna—

Mr. Butler (interrupting): I object to this, about Luna.

The Court: Yes. You must stay within your own knowledge, and make answer to his question.

Mr. Butler: Now, I will say, by way of explanation, there are certain chemical points that are material, and if he knows them, let us have them, and that will be the end of it, and if he differs with some other gentleman, let the jury de-
2013 cide who is right.

The Court: The objectionable part of his answer, to me, is, that he is proceeding to what in my judgment is a violation of the rules of evidence. I am not fresh in my reading of it, but my recollection is the case of Union Pacific Railroad against some one, by the Court of Appeals for this circuit, Judge Sanborn writing the opinion—an authority that can be found in five minutes—that books, and especially books by living authors, cannot be put in as evidence. Now, the witness was starting to answer, in effect bringing in a book by some author, whether living or dead I do not know, and that was the part of his answer that I sustained him on. Now, then, of course, as to the cross-examination of a witness, it is another

proposition, as to whether he can be interrogated and asked whether authors so-and-so, and so-and-so, are at variance with this testimony, but, unless I am mistaken,—and it is a matter easily ascertained—he cannot put in evidence, in chief, at least, scientific books. Of course, in some states, you can. Some states you cannot. The rule in this circuit is, according to my recollection, as I have stated, although I am not very clear about it.

Mr. Elliott: I want to proceed.

The Court: I know, but the witness is starting to bring in this case some scientific book, some author, whether living or dead I do not know. Let the witness answer from his knowledge.

By Mr. Elliott:

Q. I will ask you if it is within your own knowledge what the reaction is in this acid chamber process.

A. I think I can work that out. I did not make any effort to remember it. I know how it is invariably said to go.

Q. You can tell us?

A. The sulphuric acid is formed, in the major part, by two [distance] chemical reactions, in one of which the water and sulphur dioxide, oxides of nitrogen, and oxygen in the 2014 air, unite to form nitrocyl sulphuric acid, which is a compound like sulphuric acid, except that it has one NO group in it. Now, that compound, with more water, breaks up into sulphuric acid, and the oxides of nitrogen. Now, the point of the thing is just this. Theoretically, since the—

Mr. Butler: (Interrupting) I will object to that as irrelevant. The question has been answered. He asked him how to make sulphuric acid, and we have found out, now.

The Court: (To the witness) I suppose you were starting to make an argument to sustain your conclusion?

The Witness: I was going to make another statement of facts, as soon as I could get to it.

The Court: Go on, then.

A. (Continuing) It should be possible to make an indefinite amount of sulphuric acid with one treatment of nitric acid, or with these oxides of nitrogen, but there is always a loss of oxides of nitrogen, and so it must be continually added. No manufacturer can continue to manufacture sulphuric acid, without continually adding oxides of nitrogen, or nitric acid. It simply shows this, that the oxides of nitrogen are lost.

By Mr. Butler:

Q. Ultimately?

A. They are lost pretty soon. You have to keep adding nitric acid all the time.

By Mr. Butler:

Q. In very minute quantity?

A. You have to keep adding it all the time, or it gets lost.

By Mr. Elliott:

Q. I understand Dr. Acree, also to testify to this effect: "I can say this, that the flour has in it, nitric acid, and that that is decomposing the flour, in smaller quantity perhaps than it does the flesh, but, that it is acting upon the flour, same proportion to the amount present, just exactly, or, not entirely exactly, and in a manner analogous to the action of a concentrated acid on your hand. It is merely a ques-
2015 tion of amount". and later on, "I could take enough flour, and get the nitric acid out of it, and then burn my hand with it—much concentrated". I will ask you, would the watery extract of flour, concentrated, burn your hand, in your judgment.

Mr. Butler: We object to the form of the question as improper. It consists in the reading of about a page, I should judge, from the testimony of somebody else. I object to the question as improper in form. I object to the reading of this testimony. If we begin to read these lectures over and over again for implied error, we never will get through with this.

Mr. Scarritt: If that is wrong, Your Honor, we have been led astray, because our friend Mr. Butler has been doing it all the time—not reading, but repeating, and I have repeatedly objected to his doing it.

The Court: I don't know whether you gentlemen are killing time here or not, but if you are, I will adjourn for the day, but let us get at this. Are you waiting for some witness, gentlemen?

Mr. Elliott: I do not see why Your Honor makes that remark.

The Court: Well, you are making slow progerss. Go on and answer it. If we are to read every man's evidence, and ask him whether it is true or not, we had better send for our next winter's clothes. Go on.

A. I do not see how the watery extracts could burn anybody's hand, because there is no free mineral acid in it. No free nitric acid in it.

By Mr. Elliott:

Q. Do substances act the same, whether in concentrated or dilute solution?

A. Not necessarily, by any means.

Q. Could you give us some examples, indicating that?

A. Take metallic tin, and treat it with nitric acid of moderate concentration, and you get the substance that we
2016 call metastannic acid, and nitrogen peroxide. If you treat metallic tin wth very dilute nitric acid, you get stannous nitrate, and ammonium nitrate, two totally different substances from the first. If you treat metallic zinc with concentrated sulphuric acid, you get zince sulphate , sulphur doxide, and sulphate. If you treat zinc with dilute sulphuric acid, you get zince sulphate and hydrogen. You get plenty of others. Those will do, I guess.

Cross-Examination

By Mr. Butler:

Q. Was there any tin in the seized flour?

A. No tin that anybody knows of.

Q. There isn't much tin in any flour, is there?

A. That was not the answer to Mr. Elliott's question, sir.

Q. I am asking you if there is usually some tin in flour.

A. I am not a flour chemist, but there probably is no tin in it.

Q. What is the law of mass action?

A. I do not pose as a physical chemist, either.

By the Court:

Q. Sir?

A. I do not pose as a physical chemist, either.

By Mr. Butler:

Q. Is that answer satisfactory to yourself, sir, to my question.

A. I can give you an idea of the law of mass action, if you insist on it.

Q. I will not insist on it, if you do not want to undertake it. I will not insist on it.

A. I can give you an idea.

Q. Was your statement that you were not a physical chemist, expressed, Professor, as a reason why I should not have asked that question? I am unable to decide what questions come within the fields of one particular witness's field.

A. I simply undertook to give you the idea that I was an analytical chemist. I can undertake to answer your question, if you want it.

2017 Q. Well, it is up to you. I have asked the question a good while ago.

A. I did not want to, because I did not—

Q. (Interrupting) Then, I will withdraw it, if you do not want to.

A. I did not believe it was part of what I came here to do.

Q. You did not come here for that? Will NO2, in contact with water, produce nitrous acid and nitric acid?

A. Yes, sir.

Q. Will nitric acid combine, chemically, with ingredients in flour?

A. I am not a flour chemist. I can give you my opinion. My opinion is not worth very much.

Q. What do you think? I will take it.

A. I think it is combined with some ingredient in the flour.

Q. You have proved that it does, haven't you? A. Yes.

Q. That nitric acid, if added to flour, and nitric acid is not in the flour, then it has combined and formed nitrates, hasn't it? A. Well,—

Q. (Interrupting) Formed other nitro compounds, or nitrates, of some form? A. Yes, sir.

Q. Now, you are not a toxicologist? A. No.

Q. Or pharmacologist? And you would not want to express an opinion as to whether or not the nitro compound which would be formed, is poisonous, would you?

A. No, sir.

Q. Or injurious to the food? A. No, sir.

Q. Will nitrous acid form nitrites in flour?

A. It might. I don't know.

Q. You don't know about that?

A. I don't know for certain what becomes of the nitrous acid. I have my own ideas as to what becomes of the nitrous acid, sir.

Q. I am not asking you what becomes of it. I am asking you whether the chemical properties of nitrous acid are such —I am not applying it to any particular bleached flour—but I want to know about the nature of the substance. Will nitrous acid form nitrites in flour?

A. It will form nitrites, with certain substances which may be in flour.

Q. That is what I mean. Combining chemically with some of the ingredients of the flour. A. Yes, it might.

2018 Q. Like the proteids, organic bases, and form nitrose compounds, won't they? Isn't that well known?

A. I would not undertake to say what they form, because I don't know.

Q. Well, it is, in all human probability, they form nitrites, and nitrose compounds? You know that, don't you?

A. I know there are some probabilities of that. I have no personal knowledge, gained from experiments, on that.

Q. You don't know whether these nitrose compounds, or nitrites, are poisonous in character or not, do you?

A. No, sir, I do not.
Q. Now, you do know that there is water in flour?
A. Yes.
Q. About twenty pounds in a barrel?
A. I know that, yes.
Q. Twenty to thirty pounds in a barrel, isn't there?
A. Yes.
Q. Now, if you take thirty cubic centimeters,—about an ounce and a half,—of nitric acid, and put it on some flour, it would chemically combine with the flour, wouldn't it?
A. Chemically combine with part of it.
Q. Yes, that is what I mean,—with the ingredients of the flour. A. Yes.
Q. You are not an organic chemist? A. No.
Q. You do not pretend, then—and when I say "pretend" I do not use it in any improper sense—you do not pretend to go into the field of organic chemistry?
A. No, sir. I am not an organic chemist.
Q. You simply come here to testify as an analyst?
A. To certain analytical reactions, as an analytical chemist.
Q. Now, I got the impression, and if I do not state it correctly, do not trip me up about it, but see if I get the idea right. I am not speaking with chemical detail, because this matter is very hard for me to understand, but I have got the idea that catalysis, or catalytic action, is the name of something that takes place in the manufacture of sulphuric acid? That is right, isn't it, about one of the reactions?
A. Yes.
Q. At any rate, that manufacture is commercially attended by an action called "catalysis"?
2019 A. I would like to put in one word, there.
Q. Yes.
A. Modern method of making sulphuric acid, is the true catalytic method.
Q. Now, we will say, if the NO2 is the catalizer, as we call it, it means that relatively a small amount of NO2 can produce a large amount of chemical action?
A. Oh, yes. No question about that.
Q. And that the amount of product is not measured—well, I cannot express it exactly, but I don't mean that the NO2 will never wear out, or be used up, because I understood you to say that it will. A. Certainly.
Q. But, by adding small quantities, you can keep up a tremendous chemical reaction, in proportion to the quantities used? A. That is probable.
Q. That is, it seems, in some way, to increase the efficiency, in chemical work?

A. It does just exactly what I said. It increases the speed of reaction.

Q. Speed and quantity both, isn't it?

A. Well, the quantity is correlative of the other. It is a sequence of the other.

Q. That is what I mean. You do not mean it to speed, and then all through, but it is speed and quantity?

A. Yes. The rest of it follows, as a matter of fact.

Q. Will water combine chemically with flour, or any of its ingredients, under any circumstances?

A. I will have to answer that not to my knowledge.

Q. Would you be willing to answer that, or do you want to answer that, in the negative, absolutely?

A. I think a man, when he is talking about a scientific matter, is foolish to make an absolute, positive statement, about some of those things.

Q. Isn't it very well known? Some of these gentlemen who have been here seem to have the impression that it is, and I am reflecting it in my questions, that water does change some of the proteids to certain other things, by chemical reaction, in organic chemistry. Isn't that pretty well known, and also some chemical effect upon the starch, perhaps, working it into the sugar class?

A. It is probable sir, that digestion, with a considerable amount of water, would change some parts of the flour.

2020 I do not think there is much question about that. I was talking in my testimony about spraying it with four cubic centimeters.

Q. I am not speaking of your direct, at all, sir.

A. I thought you were leading to it. Excuse me.

Q. No, sir. I am not leading to anything, except to the single fact, will water combine chemically with flour. I would like to know your views on that, under any circumstances, and I am not going into the circumstances, either, and, if it annoys you a bit, I won't ask that question.

A. It doesn't annoy me, so you understand what I meant when I was talking about spraying, about it having no chemical action.

Q. I have already forgotten that.

A. If you will grant that I meant what I said, when I said that was no chemical action there, or not enough to be measured by heat, now, I will say that I am not sure that, with a considerable amount of water, there is no chemical change. In fact, I suspect there is.

Q. How about bone-ash added to flour. Will chemical action take place under any circumstances?

A. You mean water and bone-ash?

Q. Yes.

A. You said flour and bone-ash. No, not unless there is some ingredient in the bone-ash, that I do not know anything about.

Q. Now, what is chemical action?

A. Well, by chemical action, in the ordinary sense, we mean the change of a substance into—by some other substance, into something entirely different from itself.

Q. Is sweating a chemical action?

A. I have no doubt chemical actions accompany it, sir.

Q. Is freezing accompanied by chemical action?

A. Freezing is undoubtedly accompanied by chemical action.

Q. Is speaking?

A. It may be, inside. It is not outside.

Q. Eating? A. Yes, eating is.

Q. Laughing? A. In general, yes.

Q. A blow of a hammer upon a horse shoe produces a chemical action, if the horse shoe be hot?

2021 A. I should be inclined to question that, except for very insignificant amounts.

Q. If you put a little borax—is that [want] the blacksmiths used to put on? A. Yes, I believe they do.

Q. If you put a little of that on a hot iron, would it make chemical action, making a point on a plowshare, for instance?

A. There is a little action by the borax and the oxides, on the surface of the iron, but it is not in the iron.

Q. It is pretty hard to speak of anything, isn't it, that is not attended by chemical action?

A. That is very true.

Q. This light is attended by chemical action?

A. Well, I think I will have to say no, to the mere phenomena of light.

Q. But I mean the whole thing, the burner, and wire, and all, is attended by chemical action.

A. No, I do not think so.

Q. Is electrolysis chemical action?

A. Electrolysis is different.

Q. I am asking you about another matter, now.

A. There is chemical action in electrolysis, yes, sir.

Q. Lighting a match, a chemical action? A. Yes.

Q. Lighting a candle? A. Yes.

Q. Lighting the gas? A. Yes.

Q. And blowing out the gas is usually followed by chemical action, isn't it? A. That is all true.

Q. So that, when we speak of chemical action being proved or evidence, we are speaking of a broad subject, are we not?

A. Yes, that is true enough.

Q. It is as broad as life, itself, or the existence of things in nature, is it not? A. It is pretty broad.

Q. Well, it is just that broad, chemical action is, isn't it?
A. Just about.
Q. The existence of the earth, itself, is probably due to it, isn't it? A. I should not wonder.
Q. And you will not say that your existence and mine is not due to it?
A. I have a pretty good sized idea that it is due to it.
Q. Yet, in your laboratory, you never produced life, have you? A. No.
2022 Q. Or proteids?
A. That is an organic proposition. I guess not though.
Q. I want to call your attention to another thing, to see if you agree with me, about the rule of positive and negative results in the analytical work of a chemist.
A. Tell me what you think about that, and [they] I will tell you.
Q. Well, I got it into my head this way, that negative results may or may not prove anything, but that one positive result, obtained by true methods, establishes a fact, and that no amount of failures, by other methods, to establish the fact, will negative that result.
A. I am inclined to think, sir, that—

Mr. Scarritt: (Interrupting): We object to that as a mere argument.

The Court: He may answer.

A. (Continuing) I am inclined to think, sir, that upsets our theory of qualitative analysis, to a certain extent.
Q. Suppose we were examining a corpse, to ascertain whether or not the victim had been poisoned. A. Yes.
Q. And you examined, and found no poison, and with me you examined again, and found poison, what would be the truth?

Mr. Scarritt: We object to that as mere argumentation.

The Court: He may answer.

Mr. Scarritt: We except.

By Mr. Butler:
Q. The truth would be that the poison was contained there, would it not?

Mr. Scarritt: Same objection.

A. If I may answer that as I please, I would say this: that you are as liable to error, sir on one side, as you are on the other.

Q. I know, but if the poison was not there, it could not be found, could it?

A. That brings me back to the same thing.

Q. Well, could it? A. Yes. It can be found.

Q. You can find something where nothing is?

A. You can, if you make mistakes.

Q. That is all, if that does not illustrate the positive.

2023 A. You can make mistakes on either side, sir. That is the point I made.

Q. I am not speaking of mistakes. I am speaking of discovery of a positive result.

A. If there is absolutely poison there, the finding of it would be correct, and the other would not be correct.

Q. And then, though a thousand men had looked, and did not find it, it would be no evidence that it was not there, after the positive result, would it.

Mr. Scarritt: Same objection.

A. It would take more than one finding, on the strength of a thousand not finding it, sir, to satisfy me.

Q. It would? A. Yes, sir.

Q. You teach chemistry? A. Yes, sir.

Q. Suppose you had given a difficult specimen for examination to a class of fifty, and they had all looked, and could not find it, and you looked and did find it. Would you say that it was there? A. That would be because I happened to know.

Q. Because you knew how? Because you looked in the right place? A. Because I happened to know.

Q. Because you looked in the right place?

A. No, sir, I would happen to know, sir.

Witness Excused.

Walter M. Cross, being called as a witness on behalf of the claimants, being first duly sworn, was examined by Mr. Elliott, and testified as follows:

Direct Examination.

Q. What is your name? A. Walter M. Cross.

2024 Q. What is your profession?

A. My profession is that of a chemist.

Q. Will you state your qualifications as a chemist?

A. As preparation for the practice of chemistry, I was graduated from the University of Kansas, and from the University Medical College, and, during the last ten years, I have conducted a commercial laboratory in the city of Kansas City, and, during the last five or six years, I have occupied the position of chemist to the municipality of the corporation of Kansas City.

Q. Are you familiar with the occurrence of nitrites, or nitrite reacting material, in nature?

A. I have some familiarity with the occurrence of nitrites or nitrite reacting material in nature.

Q. Are you familiar with water analyses?

A. I have some knowledge of water analyses.

Q. To what extent, if any, have you found nitrites to be present in drinking water?

A. In numerous instances I have found nitrite reacting substance in drinking water, which I took to be nitrites.

Q. Well, I am using the term "nitrites", without limiting you to an actual nitrite, as such, but, as we have all been using it, in the general sense—this thing that gives the reaction with the Griess test. A. Yes, sir.

Q. Now, in what amount have you found nitrites in drinking water?

A. I have found as much as four parts per million in a drinking water which I have in mind at the present time.

Q. To what extent, if any, have you found nitrites in the water in Kansas City?

A. In practically all of the surface underflow of Kansas City, Missouri, contains nitrites.

By Mr. Butler:

Q. What do you mean by that?

A. The surface underflow, that is the first flow of water you come to, in making a boring, next to the surface, but above the rock formation.

By Mr. Butler:

Q. Is that the water you drink here? A. No.

2025 By Mr. Elliott:

Q. Now, suppose you should examine a water containing, we will say, five parts per million of this nitrite reacting substance, and ascertained, also, that such water was free from bacteria. I will ask you, would you condemn such a water?

A. I should not condemn such water on that ground. It would be, probably, free from bacteria.

Q. Why wouldn't you?

A. Because I should not consider that it contained something which, when taken into the human system, would produce injurious results.

Q. Have you examined food samples, bought on the Kansas City market, as to their nitrite content, and if so, with what results?

A. I have examined a good many samples, and I have found nitrites in many.

Q. Can you mention some of these things?

A. I have in mind at the present time corned beef, pickled pigs' feet, pickled tongue, smoked white fish, radishes, and I just cannot think of many others. Ham is another one.

Q. I will ask you if you have made any experiments to ascertain if nitrites would disappear, when put into a digestive fluid, such as pancreatin.

A. I have put some pancreatin into a flask containing some nitrites, the other day, and, after a short time, the materials failed to give the nitrite reaction.

Q. What did you use? A. I used some pancreatin.

Q. I mean, what kind of nitrites.

A. I used an aqueos solution of sodium nitrite.

Q. Now, I will ask you if you have ever exposed fresh flour to the air, to ascertain if such flour will take up nitrites from the air, and if so with what results.

A. I have exposed fresh flour to the air, and, after a while, it gave a pink color with the Griess reagent.

Q. Was that flour found by you to be free from that reaction before you exposed it?

A. It did not give the reaction, in the particular instance I have in mind, before exposure.

2026 Q. How long did you expose it to the air?

A. It was for three or four hours, in the case which I have in mind.

Q. Have you made any investigation, Doctor, to determine if met-hemoglobin is produced in the blood, when nitrites are taken internally?

Mr. Butler: I didn't understand he was a physiological chemist, or medical man.

By Mr. Elliott:

Q. You are a doctor, Mr. Cross? A. Yes, sir.

By Mr. Butler:

Q. Medical doctor? A. Yes, sir.

By Mr. Elliott:

Q. I believe you did not state that in your qualifications.

A. I am registered in this state, and I am a graduate of the medical college.

Q. Have you made any investigations to determine if met-hemoglobin is produced in the blood, when nitrites are taken internally?

A. Met-hemoglobin is not always produced when nitrites are taken into the stomach.

Mr. Butler: I move to strike that out as not responsive to the question, incompetent, irrelevant and immaterial. He has not laid any foundation on that.

The Court: It may stand.

By Mr. Elliott:

Q. Have you made any investigation, Doctor, to determine if met-hemoglobin is produced in the blood, when nitrites are taken internally? A. I made such an investigation once.

Q. Will you please tell me where, when, and under what circumstances your investigation was made?

A. I think it was in 1902, at the University Medical College, that we were making some determinations as to the formation of met-hemoglobin in the blood.

Q. Now, tell us what you did.

A. We took some nitrites, internally.

2027 By Mr. Scarritt:

Q. Who did? A. I did.

By Mr. Elliott:

Q. Just deal with yourself, if you will be good enough. Tell us how much you took. A. About a half a gramme.

Q. About half a gramme? A. Yes, sir.

Q. What is that in grains? A. About seven grains.

Q. About seven grains? A. Yes, sir.

Q. Did you take it all at once?

A. Yes, sir, at one dose.

Q. Then what next did you do?

By Mr. Butler:

Q. Did you take it all at once, Doctor? A. Yes, sir.

By Mr. Butler:

Q. At the same time? A. Yes, sir.

By Mr. Elliott:

Q. Now, what next did you do, Doctor?

A. In three or four hours we tested for met-hemoglobin by the spectroscope.

Q. You tested your own blood, did you? A. Yes, sir.

Q. And with what results?

A. We got no spectrum of met-hemoglobin.

Q. Did you make more than one test for met-hemoglobin?

A. At that time, we made some tests with acetanilid.

Q. No, I mean, did you make more than one test on yourself, at different times, or did you test your blood once?

A. I only took a lot, once.

Q. Are you familiar, Doctor, with the way—in a general way, I mean, with the use of nitrites as medicine?

A. I have some knowledge as to the effect of nitrites as medicine.

Q. I want to put this question to you. Assuming that the flour in this case was bleached by the Alsop process, and as a result, contains 1.8 parts per million of nitrite reacting material, and assuming that the bread made from that flour contains from one-fourth to one-fifth of that amount of
2028 nitrite reacting material. I will ask you if, in your judgment, eating of such bread could produce any harmful effects upon the system.

A. The eating of such bread, in my opinion, would not produce harmful effects.

Q. On the assumptions of the last question, I will ask you if, in your opinion, the eating of such bread could produce any effect upon the system.

A. It is my opinion that it would not produce an effect at all.

Cross-Examination

By Mr. Butler:

Q. Would not even make him fat?

A. I do not know that it would make him fat.

Q. Eating bread would not produce any effect on the system. Is that your testimony, as a scientist?

A. I did not make any such testimony, or such statement.

Mr. Butler: Please read his last question and answer to Mr. Elliott.

(Question and answer read as requested.)

Q. So that the flour made from this seizure, if eaten—

A. (Interrupting) He was referring to the nitrites in the seizure flour, and the context so indicates, and, therefore, the nitrites would not make him fat.

Q. Is NO2 gas poisonous?

A. Whether or not it is poisonous depends entirely upon the concentration, or character of combination in which it exists.

Q. (Referring to an exhibit) Is that poisonous? There is some, right there. A. I would not know that is NO2 gas.

Q. I tell you it is. Is it poisonous?

A. Under certain circumstances, it could be poisonous, and under certain others it could not.

Q. If you did not take it, it would not hurt you? A. No.

Q. If you took it, it would?

A. It might hurt you, if you took it.

2029 Q. NO2 is always safe, if you do not take it, isn't it?

A. I should say it would not hurt you, if you did not take it, under any circumstances.

Q. It is always safe in a bottle? A. Yes, sir.

Q. So, therefore, you say it is not poisonous, unless you know how much has been taken?

A. Or unless I know the combination in which it was taken, sir.

Q. Are some substances poisonous by their nature?

A. Depends entirely upon the combination we find them in.

Q. Now, let us talk English a while, and find out whether or not you understand the meaning of a poisonous substance, as it is commonly used among the people. Do you?

A. I think I do.

Q. What does it mean?

A. Anything has a poisonous action upon a human being which, [is] taken into the system of a human being has an injurious effect.

Q. Well, now, if nitrous acid is taken into the system of a human being, will it have an injurious effect?

A. That would depend entirely upon the combination in which the nitrous acid was taken into the system.

Q. If the nitrous acid changes your blood from the hemoglobin to met-hemoglobin, would that be injurious?

A. Anything that changes your blood from hemoglobin to met-hemoglobin would be injurious, certainly.

Q. And, if it changed a single molecule of my blood, it would be injurious?

A. I should not say it was.

Q. You could not measure it?

A. Neither could you say it was injurious, if you could not measure it. That would be pure speculation.

Q. As a physiological chemist, do you say it is safe to eat any foods, when you could not see injurious effects of it, by the symptoms following the eating of it?

A. Unless the eating of some poison or injurious substance produced symptoms , it would not be injurous.

Q. So, then, you hold every drinking water is fit to
2030 drink unless the drinking of it will produce symptoms of ill health?

A. Unless the drinking of the water is capable of producing under certain circumstances, ill health, it would be entirely safe to drink.

Q. Four parts per million of nitrites is a good thing in water, or a bad thing in water?

A. That question depends entirely upon the circumstances, sir.

Q. Well, tell me the circumstances which made it good to drink nitrites in water.

A. One cannot always call to mind all of the circumstances.

Q. Well, can you call to mind any of the circumstances which make it good to add nitrites to food or water?

A. I could call to mind a circumstance which would make in an indifferent matter.

Q. Well, I mean, to make it good.

A. Now, whether or not it is good, I could not say, but I could say it was indifferent.

Q. Chemists, the world over, fear nitrites in water, do they not, or water analysts?

A. As an indication of contamination by organic matter. They use it as a criteron, because all animal matter, at some point in its decomposition, must pass through the nitrite stage.

Q. That is the reason you find it in rotten vegetables, and rotten food?

A. It is found in food that is not rotten.

Q. You find it in rotten fish?

A. Likewise in rotten fish, yes, sir.

Q. Find it in all decaying vegetable matter?

A. Almost universally distributed in the air of this city.

Q. In what extent?

A. In small extent. Enough to combine with flour, I suppose.

Q. What is that?

A. Enough to combine with unbleached flour, I suppose, if exposed to the air.

Q. Does it combine with the bleached flour?

A. I don't know whether it does or not. Possibly.

Q. You think it would combine with the unbleached?

A. It did, with the unbleached probably.

2031 Q. Now, that is very interesting. The average surface water, known to be pure, contains no nitrites? Is that not true?

A. That is true to a certain extent. There are waters which contain nitrites.

Q. I am reading from a book called "The Examination of Water" by Mason. He is the professor of chemistry in the Rensselaer Polytechnic Institute, and a member of a lot of societies.

A. I am familiar with the high standing of Mr. Mason.

Q. He states, does he not, at Page 47, that the average, in sundry surface waters, known to be pure, there is no nitrite?

A. He probably does.

Q. And, the average, in sundry surface waters known to be polluted, is 0.006. That is six thousandths of one part per million. That is polluted water is known to have six thousandths of one part of a million. That is so laid down, is it not?

A. I believe that he says it is an indicator of organic decomposition.

Mr. Butler: I move to strike out his testimony.

A. (Continuing) That is what he says. You are picking out a little statement of the context, and making it appear true, which it is not.

Mr. Butler: May it please the Court, I ask that this witness's statement be stricken out. I ask if I am to be insulted by this gentleman, in his cross-examination, when I am asking him a fair question.

The Witness: I wish to apologize to the gentleman, if I insulted him.

Mr. Butler: Well, it is insulting.

The Witness: Not so much so as your own remarks, if you please, sir.

The Court: Now, just a moment. I find not only this witness, but a great many others who come here, insisting upon delivering us addresses and lectures. Now, witnesses ought to answer questions, and, if they have any feeling, conceal it.

Now, read the question, and let him answer it.

2032 Mr. Butler: He answered the question. My motion was to strike out his statement.

Mr. Scarritt: Now, if Your Honor please, just let me make a statement. The witness said Mr. Butler did not read the whole context.

The Court: That is, did not read the whole book?

Mr. Scarritt: Oh, no.

The Court: Well, the whole chapter?

Mr. Scarritt: No, but I understood him to say there was some modification of it.

The Court: Now, let us settle it. Hand it to the witness. I am getting tired of bandying words, here.

By Mr. Butler:

Q. (Handing the book to the witness) I have not read elsewhere than beginning at the top of page 47, either now, or at any other time.

The Court: Now, read what you say modifies it.

By Mr. Butler:

Q. Begin at the top of the page, and read Page 47, and read it to the jury.

Mr. Scarritt: I insist, if Your Honor please—

A. (Interrupting) I will read, if you please, the thing that was in my mind when I made the statement, if it is desirable.

Mr. Butler: Is this gentleman to run this court?

The Court: Just to keep these scientists from running everything, let me have the book. Now, Doctor, just listen to me.

The Witness: I want to apologize if I have offended anybody.

The Court: Now, listen to me. It is proverbial, and has been ever since I have been at the bar, and emphasized here by witnesses on both sides, that you cannot get scientists to answer the questions, but they insist—I do not say whether it is through egotism or vanity—they insist upon delivering
2033 addresses and lectures, and we cannot get them to answer the questions. Now, they are not interesting to me, and this jury has no time to listen to them. Now, please answer the questions.

The Witness: Would I be permitted to make one statement?

The Court: Yes, you may make one statement.

The Witness: The only time, Your Honor, that I ever consciously make a lecture, is in the way of an explanation, when the answer "Yes" would be an untruth, and where the answer "No" would also imply an untruth, and that is the only thing. I do not like to leave a false impression. That is the only thing. I do not wish to be misunderstood.

The Court: Now, you are knocking down a straw man, there. Now, nobody has asked you to answer a question yes or no.

By Mr. Butler:

Q. Is it not stated in the book I have referred to, by Mason, that "Average in sundry surface waters known to be pure, no nitrites; average in sundry surface waters known to be polluted, 0.006; average in sundry ground waters known to be pure, no nitrites; average in sundry ground waters known to be polluted, 0.003, or, three thousandths of one part per million." (handing the book to the witness.)

The Court: Now, if you can find anything modifying that, you can read it.

By Mr. Butler:

Q. Is it not so stated? A. I think it is.

Mr. Scarritt: We object to that question as an improper question, and immaterial.

The Witness: If you say so, I think it is.

The Court: If he finds anything in the book modifying that, he may read it.

Mr. Scarritt: But, the question is, is that in the book? That is an improper question. He may state that a certain author says so and so, and ask him if these are his views.

2034 The Court: He may answer the question.

By Mr. Butler:

Q. Did you ever, in your life, find any water, which is ordinarily consumed by people, which is free from bacteria?

A. I have found a water that is consumed by the people, that was free from bacteria, but very seldom.

Q. Then, as a practical matter, practically all of the water consumed by the human family, drinking water, contains bacteria? A. I think most of it does, sir.

Q. I understood you to say that bacteria render nitrites, in water, more dangerous than they would be if there were no bacteria in the water. Did I understand you correctly?

A. My statement was that the nitrites of themselves, were not regarded as the cause and the reason for condemning a water, but they were merely a pointer, indicating the activity of germs, these nitrites being the products of excretion of germs.

Q. Exactly. And, that this excretion of germs continues to produce other nitrites?

A. Germs of certain classes excrete nitrites.

Q. And those nitrites are dangerous, in water?

A. The germs themselves, are dangerous, and we do not condemn water on account of the nitrites, but on account of the fact that they are a sign—they are a track, showing that the other beast is there, or has been there.

Q. Now, I want to ask you whether food, like bread, may be injured by the adding of nitrous acid to it.

A. That depends upon the extent to which nitrous acid is added to the bread.

Q. By appropriate extent. Sufficient. If sufficient be added.

A. It would be possible to add sufficient nitrous acid to bread, to make it injurious.

Q. And so with nitric acid? A. Yes, sir.

Q. And so with NOCl? A. Nitrosly of chloride, yes, sir.

Q. And so with NO2? A. Yes, sir.

Q. And so, with N2O3? A. Almost anything. Salt, if you please.

2035 Q. Are they of the some class as salt?
A. Salt is a poison, if taken in too large a quantity.
Q. Do you say that strychnine, and prussic acid and salt and vinegar are all in the same class?
A. Strychnine is much more poisonous then salt.
Q. Is nitrous acid more poison than salt?
A. Very much more so, yes.
Q. Is NO2 much more poisonous than air? A. Yes, sir.
Q. Very much, isn't it? A. Yes, sir.
Q. Can you think of a substance that is not poisonous?
A. Well, very few. Water might not be regarded as poisonous, although water, under certain circumstances, injured people.
Q. How much strychnine would you say would be poison?
A. Oh, I should say a half—repeat the question, will you, please?
A. How much strychnine would be poisonous?
Q. Yes, to a human being.
A. I should think a half a grain.
Q. How much did they find in Swope's remains?

Mr. Scarritt: I object to that.

A. I don't remember.

Mr. Butler: I will withdraw that.

Q. If you found in a body at post mortem, one one-hundredth part of a grain of strychnine, answer to the jury, would you find poison at post mortem?
A. I found one one-hundredth grain, post mortem, in the body of an animal, and he had not been poisoned.

Mr. Butler: I move to strike that out.

The Court: That is not an answer.

Mr. Scarritt: That is an answer.

The Court: That is not an answer, and I so hold.

The Witness: I intended to answer the question.

(Last question read by the reporter.)

A. One one-hundredth grain of strychnine would not be poison.

By Mr. Butler:
Q. It would not be a poison? A. No, sir.
2036 Q. So, if you were employed to examine a dead human being, at post mortem, and you found only one-hundredth part of strychnine, you could conscientiously swear that you found no poison at post mortem, could you?

A. I could not conscientiously swear that the person had been poisoned, for the reason that it would be, of itself, not a poison, itself, but it might be that he was poisoned.

Mr. Butler: I move to strike out his answer.

The Court: That is not an answer, Doctor.

The Witness: May I hear the question again?

(Last question read by the reporter)

A. In that case I could not conscientiously swear that I found poison there.

Mr. Butler: I want my question answered.

The Court: Now, Doctor, he did not ask you whether or not you found poison enough to kill.

The Witness: I tried to say not.

The Court: He did not ask you whether death came by poisoning. He did not ask you that question, at all.

The Witness: Your Honor, I cannot answer that question, the way you want me to, or the way he wants me to. Now, Your Honor, the idea is this: this one one-hundredth grain of strychnine might be found, and the patient had died with symptoms of poisoning. It would then be an indication, but of itself, it is not a poison, and I would say no to the question, if I had to answer it that way.

Br Mr. Butler:

Q. No, but my question was, could you conscientiously swear that you found no poison at post mortem?

Mr. Scarritt: Same objection.

A. That would entirely depend upon the circumstances, and the history of the case, whether you would say you found poison or not. Therefore, I cannot answer the question.

Q. Suppose you found another hundredth part of cyanic acid. One one-hundreth of a grain, on top of the one
2037 one-hundredth of a grain of strychnine—hydrocyanic acid. I would then ask you whether you could conscientiously swear the same as you are swearing here in this bleached flour case, that you did not find any poison whatever, at post mortem.

Mr. Scarritt: Same objection.

The Court: He may answer.

A. The history of the case would guide me entirely in my report, as to whether I found any poison.

Br Mr. Butler:

Q. Suppose you did not know the history of the case, and knew nothing about it, except what you found in the stomach. Then, what would you say?

A. I would merely report the fact of finding the chemical, and not state whether it was poison.

Q. Could you conscientiously swear that you did not find any poison, under such circumstances?

Mr. Scarritt: Same objection.

A. I would say that I found poison.

By Mr. Butler:

Q. So would I.

Mr. Butler: That is all.

Mr. Helm: Would the Doctor want to examine the book and make an explanation?

The Court: He may if he wants to.

The Witness: The idea was that, in this nitrite discussion we had a while ago, I made the remark, and counsel took umbrage at it, that he had picked it out of the book, and had twisted it into an entirely different meaning, and I was going to read the context.

The Court: I told you if you found anything in there modifying it, to read it.

The Witness: The idea was that on page 47, he said—on page 45 this is. (Reading) "Upon the presence of nitrites in eighteen natural waters, believed from actual use to be of good, wholesome character, and collected from every
2038 variety of source, Mallet's determinations show an average of 0.0135 part nitrogen as nitrites per million parts water. The average, by the same investigator, for nineteen waters which there seems to be fair ground for believing have actually caused disease is 0.0403 part per million. The author's experience has been that the average amount of nitrites found in good waters is very much less than the value given by Mallet. In this connection it would be well to bear in mind Frankland's statement that the presence of these salts in spring and deep-well water is absolutely without significance; for, although they are in these cases generated by the deoxidation of nitrates, this deoxidation is brought about either by the action of reducing mineral substances, such as ferrous oxide, or by that of organic matter which has either been imbedded for ages, or, if dissolved in the water, has been subjected to exhaustive filtration. This is merely another in-

stance of how careful the analyist should be to become familiar with the source of the water before undertaking to pass judgment upon its quality. Nitrites should always be looked upon with suspicion if found in ground or surface waters. The absence of nitrites, moreover, proves nothing. The author has had a most foul water for analysis which showed but a trace of nitrites and no nitrates, and yet the water was contaminated with the entire house drainage, and produced serious illness." Now, comes the part he read, and I do not think he should have taken umbrage at what I said. I have read the whole paragraph.

Mr. Butler: Yes, and I am very much obliged to you.

The Witness: I do not think you ought to have taken umbrage at what I said.

Mr. Butler: I think you were inspired to it, by counsel.

The Witness: That is a prevarication, if you think that.

Mr. Butler: Well, I do. I think you were inspired by their conduct in open court.

The Witness: They did not say anything to me about it.

2039 Mr. Butler: Just before it occurred. I was interrupted by counsel, and criticised as not doing what was right.

By Mr. Butler:

Q. Now, the statement that you read, here, "The average, by the same investigator, for nineteen waters which there seemed to be fair ground for believing have actually caused disease is 0.0403 part per million", that is, four hundred and three ten-thousandths. That would be four hundred and three ten-thousandths of one part to the million? A. Yes.

Q. The water that you found containing four parts to the million, was, as I compute this, by figures, one hundred times stronger in nitrites than this, that produced disease.

A. That did not say that they produced disease, if you please.

Q. (Reading) "Which there seems to be fair ground for believing have actually caused disease."

A. I think this water that I examined, that had that much in it, was such that it would not have produced disease, if it had been used.

Q. And you told Mr. Elliott that you proved it free from bacteria, but no water is free from bacteria. You would approve water containing four parts to the million, or six parts to the million, as this author says, of nitrites,—"The average, by the same investigator, for nineteen waters which there seems to be fair ground for believing have actually caused disease."

A. I would condemn such a water, not on account of the nitrites, but on account of its general suspicious character.

Q. Now, just for the benefit of the people of Kansas City. If you found six parts to the million in water, furnished to the people to drink, here—six parts of nitrites to the million, would you condemn the water?

A. I should think that it was a pointer sufficient to cause me to condemn it. Under ordinary circumstances I should, sir.

Q. If you found four ten-thousandths of a part, would you condemn it?

A. As an indication of bacterial contamination, I should sir.

Q. You would condemn water containing any estim-
2040 able or determinable amount of nitrites, for a great city like this, wouldn't you?

A. I should, unless I found, upon further examination, that there was nothing injurious about it, outside of that.

Q. But it would be practically impossible to demonstrate that, with such certainty that the lives of this city should be risked by the proof? Isn't that true?

A. That would depend upon whether the nitrites got in from sewerage. If it was in the water of the Missouri river, into which the sewage of St. Joseph had emptied, I would condemn it, not on account of the nitrites, but on account of the indication of other conditions.

Q. On account of the fact that they indicate terrible disease germs?

A. Probably organic matter that gave rise to these nitrites.

Q. That these disease germs are accompanying the course of the nitrites? That is the truth, isn't it?

A. Yes, sir, that is the truth.

Q. So that, as an adviser to health, and as a chemical man, care should be taken with respect to all food—all organic foods, vegetables or meats, to keep down nitrites, because these nitrites may be associated with the most deadly disease germs known to your profession, shouldn't it? A. Yes, sir.

Q. And it is a perfect humbug and fraud to say that nitrites are necessary to human life?

A. Yes, sir, I should say so.

Mr. Scarritt: We object to that as an improper question.

The Court: He has answered and the answer may stand.

Mr. Scarritt: We except.

By Mr. Butler:

Q. You think that is so, don't you? A. Yes, sir.

Q. Now, it is well known by your profession, is it not, that nitrites indicate danger in foods?

A. They are like red flags, you know, to the engineer.

Q. Now, you do not have to wait, either, do you, till you measure the wicked germs that are there, and weigh them, do you, to condemn the food that is producing nitrites, do you?

A. Under certain circumstances I would condemn it.

2041 Q. That is the general rule?

A. We would not, a ham that contained nitrites, commonly.

Q. No, but it is not producing them?

A. No. They are produced during the process of curing, probably.

Q. So that, if this bleaching process sets up an action in flour, a chemical action in flour which generates nitrites therein, it is a warning that there may be germs there, destructive of human life, is it not? A. No, sir.

Q. Why?

A. In that case it is no indication that there is germs in it.

Q. Why? Where do they come from, then?

A. We have just been hearing, at great length, that the nitrites came from the nitric oxide, nitrogen peroxide, I believe, in flour.

Q. Where do they come from. I am asking you now.

A. The nitrites in the water come from—

Q. (interrupting) In the flour? A. In the flour?

Q. Yes.

A. I presume if there are nitrites in the flour, they come from the result of this arcing that we see in a bleaching process.

Q. Suppose the bleaching makes the flour decay, and, in the process of decay, they produce nitrites. Then, what do you say?

A. The bleaching would not have any action on promoting the rapidity of decay, I should say. I have had no personal experience.

Q. Let us assume that it did promote decay.

A. I cannot conceive of such an assumption. Therefore, I cannot answer that.

Q. Assuming that to be a fact, that bleached flour does decay.

Mr. Scarritt: We object to that as a wrong assumption.

Mr. Butler: There is testimony here to that effect, as I understand it.

Mr. Scarritt: Not in this flour.

The Court: Why, Judge Scarritt, as I understand it, it is claimed that it gives it three months' decay, instanter.

Mr. Scarritt: What is that?

The Court: As I understand some of the witnesses on your side, it gives three months' decay, instantaneously,
2042 instanter.

Mr. Helm: In the sense that—

The Court: (interrupting) Well, in the sense. We will adjourn court until tomorrow morning.

Mr. Scarritt: You entirely misunderstand it.

To the remarks of the Court, upon said objection, the claimants object and except.

Court thereupon adjourned to meet again at ten o'clock a. m., Tuesday, June 28, 1910.

Morning Session.

Kansas City, Missouri, Tuesday, June 28, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

Dr. Walter M. Cross, continued his testimony as follows:

By Mr. Elliott:

Q. Dr. Cross, just one matter I wanted to ask you about. You were asked the question on your cross examination that if your examined the water and found it to be free from bacteria and that water contained five parts per million of nitrite re-acting material, would you condemn it, and so on, and then Mr. Butler asked you if all waters did not contain a certain amount of bacteria. I want to ask you if you make any distinction between bacteria such as naturally occurs in water and bacteria that may be the cause of nitrite substance in water.

A. The bacteria which might occur in water that in
2043 conjunction with nitrites would cause one to condemn it or this kind of bacteria which when taken into the human system are likely to produce disease.

Q. How do you name those bacteria? A. Pathogenic.

Q. Pathogenic? A. Yes, sir.

A. And as to the bacteria which normally occur in most waters?

A. Practically all natural waters contain bacteria, although it may be perfectly wholesome and these germs are—those which are taken into the system do not produce disease and are non-pathogenic.

By Mr. Butler:

Q. Have you ever examined and ascertained whether or not flour contains bacteria?

A. I have never made any bacterial tests of flour.
Q. Do you know what the truth is in that regard?
A. Flour—most samples of flour I could say from general knowledge of bacteria, distribution of bacteria, contain bacteria in considerable quantities.
Q. That is all, sir.

Dr. Henry Albert, called as a witness on the part of the claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:
Q. State your full name, Dr. Albert.
A. Henry Albert.

The Court: Now, speak loud so people on the back seats can hear you.

2044 A. Henry Albert.
Q. Where do you live? A. Iowa City.

By Mr. Elliott:
Q. What is your profession, Dr. Albert?
A. I am a physician and teacher.
Q. What are your qualifications?
A. I am pathologist and I have charge of pathology and bacteriology at the University of Iowa.
Q. University of Iowa? A. Yes, sir.
Q. At Iowa City? A. Yes, sir.
Q. I want to ask you, Doctor, first, if you made any investigations in respect to the production of met-hemoglobin by nitrites taken internally? A. Yes, sir, I have.
Q. In a general way what has been the character of these investigations?
A. In the administration of sodium nitrite to myself and to some animals.
Q. Now, take first the animals which you used, tell us what you did. A. I took three white rats.

Mr. Butler: Oh, well, I object to the rat experiment, I think it is immaterial and irrelevant. This action is for the protection of people.

The Court: I will hear him briefly, proceed.

Q. Dr. Albert, let me ask you as a preliminary, is it within your knowledge amongst scientific gentlemen of your school that experiments with animals are commonly employed to ascertain effects of drugs and the like?
A. Yes, sir, they are.

The Court: I could not hear you now, Doctor.

A. Yes, sir, they are.

Q. Now, first tell us what you did with these rats, Dr. Albert.

Mr. Butler: We object to that.

The Court: I will hear you briefly to make this experiment with rats and other rodents.

Mr. Elliott: No other rodents, just rats.

A. I had three white rats.

By the Court:

Q. Three white rats?

A. To one I fed 1/140th of a grain of sodium nitrite, to two of them I fed 1/140th grain of sodium nitrite, and to the third I fed 1/14th of a grain of sodium nitrite.

2045 Q. How does that 1/140th correspond to what will be given to normal man?

A. Normal man about 150 pounds. It corresponds to three grains.

By the Court:

Q. Corresponds with what? A. To three grains.

By Mr. Elliott:

Q. Now, take the first rat, tell us what you did?

A. I administered or fed it, and at the end of one hour the rat was killed and the blood examined and examined for methemoglobin and none was found.

Q. None was found?

Judge Scarritt: How was it killed?

By the Court:

Q. Do the corpuscles of the blood of a rat correspond with the blood corpuscles of the blood of a man? A. Yes, sir.

Q. Can't tell them apart?

A. No, sir, you can't tell them apart.

The Court: Can't tell the blood of a rat from the blood of a man, he says.

Witness: You can tell the blood, yes, sir, but the corpuscles are exactly the same shape, about the same size, you can by blood tests, you can differentiate between the blood.

By Mr. Elliott:

Q. Now, take the second rat.

A. The second rat was killed at the end of two hours.

Q. You gave him the same amount as the first?

A. The same amount as the first, and examined the blood of that rat for methomoglobin and did not find any.
Q. Now, give us the third rat; how much did you feed?
A. To the third 1/14th of a grain of sodium nitrite.
Q. How does that compare with a dose for normal man?
A. Normal man, thirty grains of sodium nitrite to the normal man.
Q. 1/14th of a grain to this rat would correspond to a man of 150, is that correct? A. Yes, sir.

By the Court:
Q. Well, you measure the strength of a man by his weight?
A. Yes, sir, we correspond have it correspond, to the weight.
Q. I just wanted to know.
A. And this one we administered 1/14th of a grain and killed this rat at the end of one hour and examined the
2046 blood.
Q. You mean you killed the rat? A. Yes, sir.

By Judge Scarritt:
Q. In each instance? A. In each instance I killed it myself.

By Mr. Elliott:
Q. Now, what result? A. No methomoglobin.
Q. Now, have you made any experiments with human beings in regard to this production of methomoglobin with nitrites taken internally? A. Yes, sir, I experimented on myself.
Q. Tell us what you did, Dr. Albert?
A. I took three grains at seven o'clock one evening, three grains at ten o'clock the same evening, three grains the next morning at nine o'clock, and at ten o'clock I examined my blood.
Q. With what result? A. Found no methomoglobin.
Q. Between seven o'clock in the evening and nine o'clock in the morning you took, as I understand it, nine grains?
A. Yes, sir.
Q. Did you notice any symptoms or ill effects from the use of this amount of nitrite? A. No, sir.
Q. That is all.

Cross-Examination

By Mr. Butler:
Q. Did you examine the blood by means of the spectroscope?
A. Yes, sir.
Q. What make of spectroscope did you use?
A. It was a Bosch & Lamb.
Q. It has not been spoken of at this trial, Dr. Albert?
A. I don't know.

Q. What I am about to say, they tell us that the Griess test, Griess-Ilosvay test for nitrites is so delicate that you can find one part to the billion under the most favorable conditions; then I got the impression that other chemical tests are not so delicate, am I right about that? A. I don't know.

Q. Do you think that chemical tests in analysis are generally as delicate as the Griess re-agent for nitrites?

A. Well, sir, I can't tell.

2047 Q. You can't tell? A. No, sir.

Q. Did you ever study chemistry?

A. Yes, sir.

Q. Is it not known elementary that the Griess test for nitrites is the most delicate test, or one of the most delicate tests known to chemistry, and will disclose the minutest amounts?

A. Well, sir, I am not qualified to answer.

Q. Yes. Was this a pocket spectroscope you had?

A. Bosch & Lamb, a large table spectroscope.

Q. Did you use them both on each specimen?

A. No, sir, I used the pocket spectroscope upon—

Q. What say?

A. I used the pocket spectroscope in all my specimens.

Q. Is that better than the table one?

A. Yes, sir, I found it to be better than the table one, just as good.

Q. How many corpuscles in your blood, Doctor?

A. You mean the entire body? I can figure it out, there are about five million per cubic millimeter.

Q. And that would be about how many?

A. I would have to figure it up.

Q. Five million per cubic millimeter? A. Yes, sir.

Q. Well, it don't show—where are those cards, we had a little millimeter there, I think, so we can get at it. Now, these are milligrams, I guess.

A. Did I say five thousand a little while ago?

Q. You said five million.

A. Five million, that is what I meant, well, sir, I have got to figure.

By the Court:

Q. Sir? A. I have to figure.

By Mr. Butler:

Q. Give it. A. Thirty-six and thirteen ciphers.

Q. What was this—thirteen ciphers? A. Yes, sir.

Q. Just tell us what that is? A. Well—

Q. I can make it out myself but it will take me a long time.

The Court: See what the witness makes it.

Q. Is that what you make it three hundred and sixty trillion corpuscles?

A. I make it, yes, sir.

2048 Judge Helm: Is that the estimate on his own body?

Mr. Butler: That is an estimate of his own, but reduced in proportion to size.

A. Yes, sir.

Q. Do you hold that nitrous acid will not change hemoglobin to methemoglobin?

A. No, sir, I do not.

Q. It is recognized by medical men the world over, is it not, that nitrites taken in the stomach will and do change the hemoglobin to methemglobin?

A. I think it is recognized that ordinarily it will not, usually it will not.

By the Court:

Q. Will not?

A. Will not change hemoglobin to methemoglobin.

By Mr. Butler:

Q. Then you hold, as a rule, that nitrites do not change?

A. No, sir; I hold that if you add a sufficient amount of nitrite to hemoglobin it will change.

Q. Oh, yes, I see. Well, this methemoglobin is known to medicine and medical men? A. Yes, sir.

Q. And one of the causes of it is the inhalation of gaseous gases like carbon-dioxide? A. I think not.

Q. That will not change the hemoglobin to methemoglobin?

A. I think not.

Q. What will?

A. Why, there are substances like nitrite and chlorate.

Q. What? A. Nitrite and chlorate, acetanilid.

Q. Nitrite, chlorates, acetanilid, is that right?

A. Yes, sir.

Q. What else?

A. Why, I don't know, these are as many as I have in mind.

Q. The best known of which is nitrite?

A. Why, I don't know that [is] is better known that potassium chlorate.

Q. Well, it is best known in connection with this effect—hemoglobin?

A. I don't know that it is.

Q. Is it not true that—historically isn't it the first?

A. I can't tell, I don't know.

2049 Q. Now, let me see, Doctor, you are not a chemist, I gather from what you say? A. No, sir.

Q. But we will say here hemoglobin? A. Yes, sir.

Q. The red corpuscles in the human blood?

A. Yes, sir.

Q. Now, if nitrite re-acting material such as that hemoglobin it will be oxygenated, will it not, and become a methemoglobin?

A. Not unless there is a sufficient amount of it.

Q. Certainly. How much nitrite will it take to change the hemoglobin in one corpuscle of your blood?

A. I don't know how much it takes, but I know that a small amount will not make a change; it requires a certain amount.

Q. How many molecules of nitrite will it take to change one molecule of hemoglobin to methemoglobin?

A. I could not answer.

By the Court:

Q. Sir? A. I could not answer.

By Mr. Butler:

Q. Won't one molecule of nitrites change several of methemoglobin? A. I am not qualified to answer.

Q. No, you don't know about that? A. No, sir.

Q. Now, is it possible that out of this three hundred and sixty trillion red corpuscles—I withdraw that question. The red hemoglobin is associated with the red coloring matter of the red corpuscles? A. Yes, sir.

Q. One per corpuscle?

A. Why, it is not possible to say one per corpuscle, but the hemoglobin is a substance representing the coloring matter of the corpuscle.

Q. Well, now, so that we may have altogether the situation about the case, I have, we will say here, a corpuscle, magnified, of course somewhat, would that be one hemoglobin or more than one individual?

A. You might say there was a certain amount of hemoglobin in each corpuscle.

Q. Might be many, many molecules? A. Yes, sir.

Q. Might be many, many cells, cellular, is it?

A. Each corpuscle is a cell.

Q. Well, I say each red corpuscle is a cell, a single cell? A. Yes, sir.

2050 Q. And the hemoglobin substance is not cellular?

A. No, sir, you would not call that cellular, it is a part of the cell.

Q. It is a part of the cell, very good. Now, would it be possible, do you think, for you with your spectroscope examin-

ation to have missed any methemoglobin in this three hundred and sixty trillion of red blood corpuscles in your body?

A. The material if it is there would be devised to the blood, and I examined a number of test tubes and I don't think that I would have missed it if it was there.

Mr. Butler: I move to strike out the answer as not responsive to the question.

The Court: The same is stricken out as not responsive.

Q. Please answer me directly and you and I will get along much more rapidly.

A. What is the question, please? I cannot answer as such because I did not examine every molecule.

Q. Very good, we'll let it go. Is not the spectroscope such as you used a very crude test for methemoglobin?

A. No, sir.

Q. It is not? A. No, sir.

Q. What do you understand by the expression "crude test" in the question? A. Well, indefinite.

Q. Well, is it as delicate as the nitrite test?

A. As what nitrite test?

Q. The Griess re-agent of nitrite? A. I don't know.

Q. Well, I will tell you how delicate that is so that you will know, and may assume to be the fact, it will discover nitrites if they exist one part to the billion. Is the spectroscope test which you made for the hemoglobin in yourself as delicate as that?

A. Why, I am not qualified to answer; when you say that I would say that one part in the billion would not give the test, but I am not qualified to answer that.

Q. You are not qualified. How delicate is the test for nitrates known to chemistry? A. I don't know.

Q. In case of death by poisoning by nitrites it always comes from methemoglobinemia, does it not, that is so much of the blood is changed to methemoglobin that it kills—methemoglobinemia? A. What is the question?

2051 Q. I will make another strike at it. The cause of death from nitrites is always methemoglobinemia, isn't it? A. I think that is the principal factor.

Q. So that these nitrites when they kill, kill because they change so much of the hemoglobin to methemoglobin that the blood has not power to carry oxygen to sustain life?

A. Yes, sir, I think that is right, that is the principal factor.

Q. That is the principal factor. What is the other factor, that has been suggested to me?

A. Why, it tends to reduce blood pressure.

Q. Will that kill?

A. If you reduce the blood pressure enough.

Q. What other factor? A. That is all I know of.

Q. So then the tendency of nitrites [—] to reduce blood pressure and poison the blood? A. What is that?

Q. The tendency of nitrites is to reduce the blood pressure and poison the blood, kill the blood?

A. I would say that if enough nitrite comes into the body in contact with the blood it would have that effect.

Q. It will kill. There are reported, are there not, in well known medical publications, especially by Emil G. Beck of Chicago, published in the New York Medical Journal and Philadelphia Medical Journal and Medical News, about a dozen cases? A. I don't know.

Q. Of death by nitrites by changing the blood?

A. I don't know about it.

Q. You don't know about that at all, you are not a toxicologist? A. No, sir.

Q. Not familiar with deaths reported in your profession resulting from nitrites?

A. Why, no sir, I am not familiar with them.

Q. Not familiar with the change of nitrates in the human intestinal tract to nitrites and death resulting? A. No, sir.

Q. Never heard of that, Doctor?

A. No, sir, I have not heard of it.

Q. Never heard that recently the subnitrite of bismuth introduced into the canal for observation by X-rays has been found to be changed to nitrites?

A. No, sir, I have not heard of it.

2052 Q. By bacteria, and kill people?

A. No, sir; I have not heard about that.

Q. You have not heard of cases that are reported by Mr. Beck where subnitrite of bismuth used in diarrhoea in children? A. No, sir.

Q. And killed them by changing to nitrites, haven't heard of these cases? A. No, sir.

Judge Scarritt: We object to that as taking up time, Your Honor; he says he knows nothing about toxicology.

Mr. Butler: I don't know what he is here for.

Judge Scarritt: The jury does if you don't.

By Mr. Butler:

Q. Is it not the well known law of your profession that children are most susceptible to nitrite poisoning due to the administration of bismuth subnitrite?

A. Well, sir, I don't know about that.

Q. You don't know about that, but you do know that nitrites are substances of such character that if they do come

into contact with the human blood they will change the blood to methemoglobin? A. If in sufficient amount.

Q. Certainly, and if in sufficient amount it will so change so much of that blood as to produce synosis, similar to suffocation, similar as it exists in cases of suffocation? A. Yes, sir.

Q. To begin with, reduction of blood pressure causes death, you say? A. Yes, sir.

Q. In sufficient quantity? A. Yes, sir.

Q. Now, then, therefore nitrites when coming into contact with the blood poison and kill the blood to the extent of the quantity that comes into contact with the red corpuscles of the blood? A. No, sir.

Q. It does not. Well, it changes it, you say, to the extent of the quantity? A. No, sir.

Q. Oh, I see, I see. How much does it take to change one corpuscle? A. I could not answer that.

Q. Can you swear as a medical man that a single molecule of nitrite, if it strikes a single molecule of the hemoglobin, will not change it to methoglobin?

2053 A. I can say that we have no evidence that it does.

Mr. Butler: Well, I move to strike that out.

The Court: Yes, sir, that is not an answer.

Judge Scarritt: I object to striking out that answer.

(Question read by the reporter)

The Court: He may answer this question.

A. I would say that it does not.

Q. Will two molecules of nitrites change one molecule of hemoglobin to methemoglobin?

Counsel for claimant objected to the question as mere argument and losing time.

The Court: You may answer.

[Q.] I can't tell with reference to each individual molecule.

Q. Well, can you tell that one molecule of nitrite will not change one molecule of hemoglobin—I thought you couldn't tell that.

A. I say those are the smallest particles that come together.

Q. Yes, why can't they change this, why can't they combine and make methemoglobin?

A. Well, sir, I have examined the blood in such cases and I do not find any methemoglobin.

Q. Did you make the experiment? A. Yes, sir.

Q. When? A. Sometime ago, a couple of months ago.

Q. Are these the experiments you referred to in your direct examination? A. No, sir.

Q. In your experimentation did you ascertain the smallest amount of nitrites that would change one corpuscle of blood from hemoglobin to methemoglobin? A. No, sir, I did not.

Q. It is a chemical re-action, is it not?

A. Why, I think it is regarded as a sort of a chemical re-action.

Q. It is oxygenation, is it not?

A. Yes, sir, I understand it is.

Q. What is comparable with it in the human economy, what else, what other thing?

A. Well, it is simply giving to the hemoglobin more oxygen.

Q. Well, we do that every time we breathe, don't we?

A. Yes, sir.

2054 Q. Does that make it methemoglobin?

A. No, sir, it is the oxygen arranged in some different way.

Q. Is a different quantity now, and made different there?

A. No, sir, not a question of quantity.

Q. Now, isn't it oxygenated in some way? A. No, sir.

Q. As far as chemists have ever determined isn't it this, that the oxygen is held in so deep a grasp when it is changed by nitrites that it will not unload in the tissues to sustain life, whereas when oxygenated in the lung it will unload its oxygen, and isn't that the only difference that has ever been discovered on the subject of that question?

A. It is not a question of where it oxygenated.

Q. What is that?

A. It is not a question of where it oxygenated but it is true, as you say, that it will not give up its oxygen, is the trouble.

Q. Yes, sir, so that it is a straight chemical action exactly as any other chemical action?

A. Well, sir, I am not qualified to answer.

Q. No, I think not; you said it was not. Now, then, so that under the chemical laws you have ascertained in your scientific researches, I have no doubt, are laws which act with certainty?

A. Well, I am not enough of a chemist to say; I presume that many of them doubtless do.

Q. They all do under like circumstances give the conditions so that any man educated in chemistry will know that if he puts nitrite acid on iron it will eat the iron, doesn't he?

A. Well, I would not like to answer that because I am not qualified.

Q. Don't you know that if you put hydrochloric acid on zinc it will make chloride of zinc?

A. No, sir, I don't know that.

Q. Well, are you not familiar with the very simplest elementary chemical re-actions known to the students in the high school? A. Well, sir, I have to state—

Mr. Elliott: I object to this kind of examination of this witness; he has qualified as a pathologist and bacteriologist, not as a chemist, he said he is not a chemist; I don't think it is fair.

2055 Judge Scarritt: Just taking up time.

Mr. Butler: Well, I know, but the trouble is, may it please the court, they might as well put on a theologist to talk about hemoglobin and methemoglobin as a man who does not understand what a chemical action is or chemistry, to the extent that it is taught in the high schools of the country.

The Court: Well, never mind, now, this gentleman is called as a pathologist. While I don't know that I know the difference between a pathologist and a theologist, I don't know whether I do or not, but I suppose both that a pathologist and a theologist would know the elementary rules of chemistry —I don't know whether they do or not—I think we have a right to find out. Go on.

A. Well, sir, I might say that I have had chemistry and I know something about chemistry, but I don't care to answer any definite action about a definite reaction because it has been so long since I have had it.

Q. I know, but I don't want any involved chemistry, but what I do want is this, when oxygen combines with iron it makes oxide of iron, doesn't it?

A. Yes, sir, I think that is right, but I am not going to answer some of those questions because I don't know about definite chemical re-action.

Q. No, but I say, unless the chemical laws were certain there would be no chemistry, there would be no science at all, would there?

Judge Scarritt: I object to that as mere argument, taking up time.

The Court: He may answer.

A. I say as I did before, that I regard that many of the chemical laws are certain and definite.

Q. Certain medicines which are administered—you know about medicine, do you? A. Yes, sir, something about it.

Q. You are not a specialist in that line, I understand?

A. No, sir.

Q. Not a practitioner? A. No, sir.

2056 Q. But it is well known, is it not, that medicines given to people act chemically sometimes?

A. Sometimes act chemically, yes, sir.

Q. And the action is immediate, direct and certain, depending upon the quantity administered?

A. No, sir, not necessarily on the quantity administered.

Q. But nitrites do, you say, depends upon the quantity administered? A. No, sir.

Q. No, I am glad to know that, so then in one case a minute amount of nitrite might work out injury, where in another case it would take a large amount?

A. No, sir; I would say that a minute amount comparatively would not.

Q. I mean relative? A. Yes, relative.

Q. Don't you think you might kill a baby with a very small amount of nitrite? A. No, sir.

Q. You think not. Can you kill a baby with nitrite?

A. Yes, sir.

Q. It is a poison, isn't it? A. Nitrite?

Q. Yes, sir. A. Taken in sufficient amount.

Q. Amyl nitrite is one of the deadly poisons, isn't it?

A. In sufficient amount.

Q. Well, you have to take every deadly poison in sufficient amount don't you? A. Yes, sir.

Q. Isn't any substance which [is] a quantity of less than sixty grains is poison—

Mr. Elliott: If Your Honor please, I object to that. This gentleman is not a toxicologist. We will give the gentleman witnesses who can answer these questions. This witness has testified to two experiments that he made for the purpose of examining the blood; he tested the blood for a certain purpose; if you want to ask him anything about that, I have not the slightest objection.

The Court: Just a moment. I don't want to quote this witness wrongfully, but I understood this witness to
2057 say that the power of resistance by anything, by any animal life, including the person, was measured by the avoirdupois, and that is what I understood, that he thinks the one hundred and fifty pound man compared with a white rat; I don't know anything about that; well, now, it seems to me that they have a right to go into that, which would be harmful to a baby perhaps fifteen or twenty pounds weight, if that is the way this witness gets at it by avoirdupois; of course I never heard of that before, but perhaps the witness it right.

Mr. Elliott: It was not a question of resistance, it is the simple easy way of determining relative amounts that they gave to these animals.

The Court: I never heard of that before, that a man's strength, power of resistance was in proportion to his avoirdupois; maybe he is right, I understood him to say.

Mr. Elliott: He didn't say that.

The Court: I was glad to know I was the best man, physically in the room.

Mr. Elliott: He said he meant to give it comparable to giving a certain amount of a certain weight compared with a rat.

By the Court:
Q. This white rat weighed about what?
A. Hundred and fifty grams.

By the Court:
Q. How much is that?

Mr. Butler: About a pound.

Witness: No, sir.

By Mr. Butler:
Q. Five ounces?

By the Court:
Q. One-third of a pound? A. One-third of a pound.

By Mr. Butler:
Q. And a ten months' Baby would weigh about what?
A. About sixteen to eighteen pounds, twenty pounds.
Q. Is the power of resistance in a rat to a poison—to nitrites such as are found in decaying foods and decaying meats, equal or greater than that of a baby?

Mr. Elliott: I object to that as not proper cross-examination.

2058 The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

[Q.] I couldn't say; I am not qualified to answer. I understand that there is some difference in the question of the reaction to different kinds of tissues.
Q. That is within the field of your specialty, isn't it?
A. No, sir.

Q. Very well; I can't seem to find anything that is. You are a pathologist? A. Yes, sir.

Q. That has to do with disease? A. Yes, sir.

Q. And causes of disease? A. Yes, sir.

Q. Well, now, I am after a cause of sickness; is it a cause of sickness; pathology has to do with the cause of sickness?

A. Yes, sir.

Q. All right. Now, let me see, is there any relation between a rat weighing five ounces and a baby weighing ten pounds as to who could stand the most nitrites such as you would find in decaying impure and adulterated foods?

A. That is really a question that belongs to the toxicologist.

Q. Oh. A. Toxicologist and pharmacologist.

Q. So your science would not have to do with sickness of babies caused by taking adulterated, impure and nitrite bearing foods? A. No, sir, not as such.

Q. I see. Now, this experiment that you made relates wholly to the field of physiological chemistry, does it not?

A. No, sir; I have charge of a clinical laboratory.

Q. I am not speaking what you have charge of; I am asking you if the study or change of the blood corpuscles when chemicals are used, does not relate to physiological chemistry?

A. Yes, sir, it does.

Q. Are you a physiological chemist?

A. No, sir, I am not.

Q. Did you ever in your life discover hemoglobin in living blood? A. I have.

Q. When? A. So many times that—

2059 Q. Whose blood?

A. My own and a great many others.

Q. What produced it? A. Produced the hemoglobin?

Q. Yes, sir.

A. Well, I am not qualified to answer.

Q. The methomoglobin, I misspoke myself.

A. No, I never found out.

Q. You never saw methomoglobin, did you?

A. Yes, sir, I have.

Q. Where?

A. Why, in handling a large amount of chemicals.

Q. But I mean ever taken any from the living blood stream?

A. No, sir, I have not.

Q. You have any blood shaken up in a freezer?

A. Yes, sir.

Q. And you have found out that nitrites will do that, haven't you? A. Yes, sir, I have.

Q. That is well understood, isn't it? A. Yes, sir.

Q. And it will change it to alkali color, won't it?

A. Yes, sir.

Q. Were you here when that was done here in this trial?
A. No, sir.
Q. So, then, in all your life as a scientist you never did discover by the means of the spectroscope or anything else any methemoglobin in blood taken from the living blood stream?
A. No, sir, I have not.
Q. Now, that has been done, has it, in the world?
A. I think so.
Q. Men acquired in that skill in ascertaining how to do that?
A. It is not a question of skill, it is simply a question of whether it is there or not.
Q. So that any juryman could take your spectroscope and apply himself and tell us there was one hemoglobin in one corpuscle changed, just as well as you could?
A. No, when I said it is not a mater of skill, I meant a man could see a methemoglobin in a test tube prepared and also see it in the blood.
Q. Oh, that is it. Is there any substance in the world which taken by the stomach will produce methemoglobin?
A. That will produce it?
Q. Yes. A. I don't know of any.
Q. Nitrites will not, taken by the stomach in any quantities?
2060 A. Well, I suppose in a very large dose it will, but I don't know of any.
Q. How big a dose would you need for a baby six months old that had a little gruel made out of flour?
A. Well, sir, I don't know.
Q. Would be pretty small compared with what it would take to produce it in you? A. In me?
Q. Yes.
A. I would say comparatively, compared to the size, no, I would not say that.
Q. Take more in a baby compared to the size?
A. Why, the baby has less blood than an adult, so I think that is right, depending on the size it would take less than an adult.
Q. Yes, sir, depending on the volume of the blood the same.
A. It requires a certain amount—if I may answer in this way—it requires a certain amount to produce the methemoglobin quantitatively, and if there is less blood to act on necessarily it would be more dilute, I mean more concentrated.
Q. I see. You don't think it takes very many, you say when the contact is made you don't think it takes very many molecules of nitrites, like amyl nitrite?
A. Well, sir, I couldn't answer that.
Q. No, you don't know about that, do you? A. No, sir.

Q. Well, now, not knowing Doctor, about that, don't you think it would be very poor policy to put in a baby's food some nitrites?

Counsel for claimant objected to that as calling for a mere conclusion of the witness, invading the province of the jury.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. Don't you think it would be a poor policy to put nitrites in baby's food regularly so the mother could not keep it out. I ask you if it would not be poor policy to purposely add nitrites like amyl nitrite, for example, to a baby's foods regularly and habitually and to such an extent that neither baby nor parent could avoid giving the nitrite carrying food to the baby? That, I think, is within the fields of pathology.

2061 Counsel for claimant objected to the question as incompetent, irrelevant and immaterial; invading the province of the jury and a wrongful conclusion of the witness because there is no amyl nitrite in this flour, improper cross-examination, and simply for the purpose of prejudicing the jury.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. I want to know what he thinks is good to raise babies on.
A. Well, sir, I would say it depends entirely on what the effect would be on the baby, before I could answer.
Q. Yes, I know, now, let me see that question, so you understood my question this way, did you, whether—you understood me to ask you as a pathologist whether or not you didn't think it would be bad policy to add nitrites, as for example, amyl nitrite, to babies' foods regularly: You understood that to be my question? A. Yes, sir.
Q. And you answered that question, Dr. Albert, by saying to this jury that that would depend upon how it affected the baby? A. Yes, sir.
Q. Well, now, isn't that true of all foods and substances?
A. What do you mean?
Q. That whether you could give them or not would depend how they affected the baby?
A. I would say so, in a general way, yes, sir.
Q. And is that as much light as you can give us on the subject? A. Yes, sir.

Q. So you could not differentiate between any two substances?

A. Well, I don't hardly understand what you mean; I say that it is, in a general way.

Q. Well, how about prussic acid, let's see—is hydrocyanic acid and prussic acid the same, Dr. Albert?

(No answer.)

Q. Now, would it be a good thing—

Counsel for the claimant objected to that question.

The Court: Go on.

Q. Now, can you tell us whether or not it would be
2062 good for the baby if there were added to it regularly, every day added to its food a little hydrocyanic acid?

A. I would answer it in the same way.

The Court: Answer it.

A. I answer it in the same way; it would depend entirely on the effect it has on the baby.

Q. Strychnine? A. I say the same thing.

Q. Nicotine? A. I say the same thing.

Q. Cigar ashes in its milk? A. Yes, sir.

Q. Watch for the effect upon the body. Corrosive sublimate?

Counsel for claimant made the same objection as last above.

A. I would say the same thing. I am not saying to any particular baby, I don't know.

Q. You would not do that to mine if I saw you first, I tell you that.

The Court: Go on.

Judge Helm: You are proposing to do it.

By Mr. Butler:

Q. Now, can you tell us whether it would be wise, from the standpoint of the health of the baby to give it a little corrosive sublimate with every meal?

Same objection by counsel for claimant.

The Court: You may answer.

A. I would say the same thing.

Q. That would depend upon the effect upon the baby?

A. Yes, sir.

Q. Are you a married gentleman? A. Yes, sir.

Q. Have you any babies? A. No, sir.

Q. You don't treat any people's babies, do you?
A. No, sir.
Q. Then, as a scientist and pathologist you teach medical men? A. Medical students.
Q. Medical students come to you for learning, and you would not be able to tell them whether corrosive sublimate was bad in babies' foods until you tried it on babies?
A. Well, sir, I don't teach that subject so I would not.
Q. But you couldn't tell them as a pathologist?
A. No, sir. I could not.
2063 Q. Well, don't you know that corrosive sublimate in minute quantities and solutions is used to destroy life every day and every hour by every nurse, mother, and medical man now practicing, don't you know that?

Same objection by counsel for claimant.

The Court: He may answer.

A. The question of minute quantities is mentioned, I would say in minute quantity, as I might understand it, I would say no; but if it is in large quantities it would.
Q. Don't you know that little tablets dissolved in basins of water are used every time there is a wound to cleanse, before dressing, to cleanse the instruments, to cleanse the hands, to destroy the germ life, the effect of the wounds, don't you know that? A. I know it is used for some of these things.
Q. And used habitually and daily by nurses and medical men the world over? A. By some it is used.
Q. And generally, isn't it?
A. Why, a great many don't use it.
Q. Yes.

Judge Scarritt: What has corrosive sublimate got to do with this case? I object to this in the interest of time, I want to save time; here is the place to save time.

The Court: Yes, but this witness is dealing in this quantitative theory.

Judge Scarritt: He is not dealing in this at all.

The Court: Well, in poisons.

Mr. Butler: He said seven grains won't change any blood, we will find out.

The Court: Go on.

Mr. Butler: I will find out whether or not there are substances which will injure blood before I get through, even by this witness.

The Court: Go on.

Q. Now, you may answer the question.

A. What is the question, please? My only reason for modifying is they do not use it for cleansing instruments; your general question is all right; I say yes.

Q. Now, as a matter of fact, because it is so poisonous or destructive of all forms of life?

A. That is the reason they use it.

2064 Q. And it is so intensely poisonous that they have been trying for years to find a substitute, and the use of it is becoming less? A. Yes, sir.

Q. In fact, now, that is true, isn't it, dilute it as you may, the stuff is so poisonous that they are trying to use alchohol and other substances in its place?

A. I wouldn't say dilute it as you may.

Q. Well, I know, as a practical matter?

A. It requires a certain amount before it will kill.

Q. Now, then, I want to ask you, Doctor, again if you still affirm that such dilution of that kind of stuff may be added to the baby's food daily, nightly, uniformly, so the baby must take some of it, and that you can't tell us whether it would be a good thing or a bad thing for the baby; do you say that?

Same objection by counsel for claimant.

The Court: Let him answer.

To which ruling of the court claimant then and there duly excepted.

A. You say if I still affirm—I would like to hear that question.

The Court: Now, Mr. Witness, this takes up a whole lot of time to have the question read every time. I do wish you witnesses would listen and then answer the question.

(Question read by the reporter.)

Judge Scarritt: You are speaking of corrosive sublimate?

A. Yes, I would say that I couldn't tell.

The Court: Well, that answers it, that is enough for that; he says he can't tell.

Mr. Butler: Yes, sir, that is all.

Q. Now, one more question, is not the reaction which takes place in the blood, the hemoglobin is changed to methomoglobin, a chemical re-action exactly comparable as far as the ques-

tion of whether or not it is a chemical re-action is concerned, with carbon monoxide-blood and with cyan-hemoglobin?

A. I rather think it is, but I wouldn't say definitely.

2065 Q. Well, now, Doctor, is it not the learning of your profession that carbon-monoxide blood is a result of definite, well known chemical re-action?

A. I understand [it] definite chemical reactions are not known, and it is regarded as a sort of a chemical re-action.

Q. It is regarded as a sort of chemical re-action, the details—the re-action of which may not be written out, is that it? A. I think that is right.

Q. Well, now, that is the monoxide blood results from inhaling illuminating gas, which is made from tar in part and contains carbon monoxide? A. Yes, sir.

Q. That is a well poison of the blood, isn't it?

A. Yes, sir.

Q. That takes place when people are asphyxiated?

A. Asphyxiated in that manner.

Q. I mean not only asphyxiated by poison by the methemoglobin that is entered in there. A. Yes, sir.

Q. Now, what produces the cyanosis?

A. I could not answer.

Q. Isn't it our old friend hydrocyanic acid, the prussic acid?

A. I believe it is, but I am not qualified to answer that.

Q. Now, does not pathology have to do with that?

A. No, sir.

Q. Nor does it have to do with baby foods?

A. Why, it has no—not the ordinary baby food, no, sir.

Q. And the health of babies?

A. Well, it has to do with the health of babies.

Q. Has nothing to do with chemistry?

A. Has to do with certain offices of chemistry.

Q. Does a pathologist need to know the principles of chemistry? A. He needs to know something about chemistry.

Q. Is this a fair statement of your position with respect to the effect upon babies and other members of the human family, of substances, that you are unable to affirm that any substance in any particular quantity would be injurious until you had observed symptomatic results of the administration of the thing in question or under suspicion?

A. Yes, sir; I would say that is right.

2066 Q. So that no drinking water should be prohibited as injurious unless you could observe symptoms in the person's drinking it within a proper time after he drank the water?

A. I would say the symptoms are some evidence of harm.

Q. So then no amount of nitrites in water would condemn it unless you find people who were made sick or killed by it, or impaired in health? A. Why, I say that is true.

Q. And so it would be safe to feed to the babies and children of Kansas City decaying vegetables and you would not prohibit that until you saw that the babies were affected injuriously by it?

A. Why, I will answer in this way, if—

Q. Can't you answer it affirmatively or negatively?

A. I don't think I can.

Q. Why? Anwer it in your own way now and tell us why you cannot say yes or no to that?

A. Whether if I prohibited the use of decaying food?

Q. Yes, nitrite bearing food?

A. I would say I would prohibit the use of decaying food.

Q. Because it is bad and known to be bad, isn't it?

A. Yes, sir.

Q. That is true? A. Yes, sir, in sufficient amount.

Q. Well, I know, but if you could get fresh foods that had not decayed at all, would you use foods that had decayed at all?

A. I prefer the food that had not decayed.

Q. On acount of the health of the people? A. Yes, sir.

Q. Now that is the ABC of your profession, isn't it?

A. Yes, sir, that is all right.

Q. And these decaying foods, you know, produce these nitrites, don't you?

A. Some of the decaying foods produce nitrites, but that is not the reason they are harmful.

Mr. Butler: I move to strike out what he says.

Mr. Elliott: I think that is entirely proper.

The Court: Yes, stricken out.

Q. Now decaying foods are harmful for many reasons, are they not?

A. For various reasons, yes, sir.

Q. Nitrite in foods and drinks are harmful, are they not? A. I don't know that they are.

2067

Q. You don't know that. Is corrosive sublimate?

A. I would say I would have to know how strong it is.

Q. Strychnine? A. No, sir, the same thing.

Q. Prussic acid? A. The same way.

Q. Nicotine. A. Yes, sir.

Q. Class them all the same as nitrites?

Counsel for claimant objects to this repetition.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I don't know what you mean by "class them all the same as nitrites."

Q. You cannot understand that question.

A. No, sir, I don't understand what you mean.

Q. When I say whether you class prussic acid and strychnine, nicotine, corrosive sublimate and nitrites the same, when we are considering whether or not an addition of any one of these to food would be injurious, you cannot understand that question.

A. I would say, yes, sir, I would say unless it has been shown that they are harmful.

Q. Yes. A. That I would not say that they were.

Q. So that, doctor—now let me be perfectly fair with you, you say in determining the question that you and I have been talking about, that neither nitrites nor strychnine nor corrosive sublimate, nor prussic acid, nor nicotine, may be said to be injurious to food, if added thereto until it be shown how much?

Counsel for claimant objects to the question as a repetition, and in the interest of time.

Q. Let me finish my question.

The Court: Now gentlemen, all of you lawyers know as well and I guess better than I do that the orderly way is when the question is asked then make an objection as to its competency or its admissibility, or as to their cross-examination;
2068 I cannot conceive of any other legitimate objection that can be made; then the witness should suspend his answer until the court rules; if the objection is overruled the witness can answer. Now if you will observe these rules we will make progress.

By Mr. Butler: (Resuming)

Q. Now I withdraw that question, and don't answer until Judge Scarritt has an opportunity to object and argue his objection and until the court rules.

Judge Scarritt: I do not want to argue, I have not argued an objection yet.

Q. Now in determining whether or not nitrites are injurious to food if added thereto, do you put nitrites, strychnine, corrosive sublimate and prussic acid in the same class and insist that you must know the quantity of each before you can form an opinion as to whether or not the addition of any one to food as a regular thing three times a day would be proper or not? A. Yes, sir.

Judge Scarritt: I want to object to that as repetition for the fifth time and taking up the time of the court and jury and repeating the question.

The Court: The witness may answer. Now it is not for anybody in this case to complain of consumption of time except myself, because I am not criticising anybody.

Judge Scarritt: I can object in the interest of time.

The Court: I know, and this morning you objected to my convening court at 9 o'clock, and we will not take a recess of five minutes.

By Mr. Butler: (Resuming)

Q. Just one more question, which will be very short. Are you familiar with rattle snake poisoning?

A. Why, no, sir, I would say that I am not; I know that there is rattle snake poisoning but I am not familiar with it.

Q. I have heard the rattle snake bite will probably kill—may I go on—I did not observe that the Judge was not here. Is it within your knowledge that the rattle snake bite will probably kill a human being.

2069 Judge Scarritt: I object to that as incompetent, irrelevant, immaterial and nothing to do with the issues in this case, consuming time.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Now I tell you it may.

Q. Is it within your knowledge that it will probably be harmless to a hog?

Same objection.

A. No, sir.

By the Court:

Q. Sir? A. No, sir, I said.

Q. Is it your understanding that a rattle snake will kill a hog? A. No, sir.

Same objection by claimant.

By the Court:

Q. Sir? A. No, sir.

Q. Well, you will not say you don't know?

A. I said it is not within my knowledge, I don't know.

Q. You don't know anything about that? A. No, sir.

Q. If you were to find a single germ so small that it would require a microscope of the highest power to discover it, the minutest ever identified, but that it is identified as a typhoid germ would you have to wait until somebody got typhoid fever from drinking the water which contained it, before you would know that it was bad to give babies to drink?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. You mean that germ in that water?
Q. Yes.
A. I would say generally I know that from past experience if the water contains the germs, it is liable to produce typhoid fever.
Q. One germ? A. No, sir.
2070 Q. That was never demonstrated was it?
A. No, sir.
Q. But if you find one germ in a source of water, one typhoid germ, just one, miscropically, you would warn all people from the spring as you would warn them from a place of pestilence, wouldn't you?

Same objection by claimant.

The Court: Objection overruled; he may answer.

To which ruling of the court claimant then and there duly excepted.

A. I would warn them, yes sir.
Q. And yet it has never been shown that one germ ever gave anybody the typhoid fever?
A. Then I would have to explain now—
Q. Well, has it been so shown? A. No, sir.

The Court: He wants to explain.

A. I want to explain that if I knew that there was a single germ I would warn people because there probably would be other germs.
Q. That is right, but suppose there wasn't any other germs.
A. And also because germs keep multiplying and from one germ there may be a large number produced.
Q. Suppose we have demonstrated there was only one germ, tell people to take it, would you?
A. No, sir, I would not.
Q. You would tell them not to, wouldn't you?
A. Yes.

Q. Even if it was proved there was but one and you needed a microscope to see it? A. Yes, sir.

Q. And yet it is well known, is it not, that the human system eliminates without injury, without observable injury, to it, typhoid germs by the million?

A. Yes, sir, that is true, not by the million I would not say.

Q. Well, it is well known that the springs of water which give typhoid fever to some people does not give it to others who are using it?

A. Yes, sir, that is true.

Q. And that is demonstrated, is it not? A. Yes, sir.

Q. That the germs go through harmlessly?

A. Yes, sir, that it could go through harmlessly.

2071 Q. When it may reveal the cause of the danger of the nearly microscopic germ, that is a poisonous germ, isn't it?

A. I would not call it a poisonous germ; I would say a disease producing germ.

Q. It is a poisonous germ, isn't it?

A. Not necessarily.

Q. Well, call it what we will then, it is not non-poisonous?

A. No, you could not call it non-poisonous.

Q. So that because of the danger of that infinitesimal, unweighable, unmeasurable amount of that terrible germ, you would warn every person who would take your advice to keep out of him if he could, wouldn't you?

A. Yes, sir, I would.

Q. And a drop, a single drop of prussic acid upon the tongue of a baby would probably be as fatal to the child as a stilletto through the heart?

Same objection by claimant; objection by the court overruled; to which ruling claimant then and there duly excepted.

A. I am not qualified to answer.

Q. You don't know? A. No, sir.

Q. Don't you know that the fumes of prussic acid are so deadly that chemists, teachers of chemistry, very often on account of the danger decline to permit their students to handle it? Don't you know that?

Same objection by claimant;

Objection overruled.

To which ruling of the court claimant then and there duly excepted.

A. I don't know that; I know that enough of the fumes are deadly but I don't know whether they decline to have them work with it.

Q. Doesn't every teacher of chemistry warn the green students of the deadliness of that stuff?

Same objection.

The Court: He may answer.

A. I think he does.

Q. In any amount?

A. I don't know, he warns them, a man with the experiments for the first time.

Q. He does not wait until some of his class are prostrated by the poison, does he? A. No, sir.

2072 Same objection.

Q. He does not wait until he can see some symptoms upon his class does he? A. No, sir.

Q. If a rattle snake was produced here in court you think he ought to be killed before he bit anybody, don't you?

Same objection.

The Court: He may answer.

A. I would think so.

Q. You would not have to wait to find out how much it was, to find out whether that creature was poisonous or not?

A. No, sir.

Q. You would know he was poisonous, wouldn't you, and you know strychnine is poisonous, and you know corrosive sublimate is poisonous and you know all these things we have been talking about are poisonous, amyl-nitrite and the rest, don't you?

A. I would say that they are poisonous in certain quantities.

Q. You say they are poisonous by nature, don't you, antagonistic to life?

A. Why, in sufficient quantities.

Q. In the minutest quantities? A. No, sir.

Q. Food in the minutest quantities, are they?

A. I would not say that they are food.

Q. Are they ever food?

A. I do not presume that they are regarded as food.

Q. You know they are not, don't you?

A. No, I don't know that they are, I rather think—

Q. You know they are not regarded as food, don't you?

A. I think they are not regarded as food.

Q. Well, you know they are regarded by humanity the world over as poisonous, don't you?

Same objection.

Q. And that they are as poisonous, as a warning, as a danger, wherever you buy them, wherever you see them, you warn your pupils against them, won't leave them about the house, afraid somebody might take too much, the very strongest regulation, afraid they might kill people, these things
2073 are poisonous, aren't they?

A. They are poisonous in sufficient quantities.

Q. Is flour poisonous, have you got that in your head yet, have you found out that flour is poison yet?

A. Well, I am not hardly qualified to answer in toxicology.

Q. Is a car load of bleached flour a poison?

A. Why, as I look at it, not as a toxicologist, I would say no.

Q. Is it if it is unbleached? A. I would say no.

Q. Never poisonous then?

A. I would not regard it as such.

Q. No, nor anybody else.

Redirect Examination

By Mr. Elliott:

Q. Dr. Albert, isn't it a well known fact that germs multiply and multiply rapidly? A. Yes, sir, it is.

Q. You understand that as to any of these substances that Mr. Butler has been asking you about, that they increase and multiply when you take them into your system?

A. No, sir, I do not.

Q. I will ask you in the case of decayed fruit, when you said that you would avoid the use of decayed fruit, if you intended your answer to mean that you would avoid the use of them on account of any nitrite contained? A. No, sir.

Q. I will ask you if what occurs in the test tube when you produce met-hemoglobin, is in your judgment any criterion of what occurs when you take amounts of nitrites such as you took internally?

A. I would say that if it enters the blood it is.

Q. Yes, the amounts you tested your own blood and did not find any nitrites? A. Yes, sir.

Q. I say now, is what occurs in the test tube, blood outside of the body a criterion then as to what occurs when you take nitrites internally?

A. Well, I don't think I understand your question.

Q. Well, suppose, for instance, you added three grains of sodium nitrite to a certain amount of blood in the test tube, outside of blood, you had taken ox blood we'll say, and you got met-hemoglobin? A. Yes, sir.

2074 Q. In your judgment does it necessarily follow, if you take three grains of nitrites internally that you will get methemoglobin in the blood? A. No, sir.

Q. Is the spectroscope the most delicate instrument known for detecting the presence of methemoglobin in the blood?

A. Yes, sir.

Q. That is all.

Recross-Examination

By Mr. Butler:

Q. Now because germs multiply they are dangerous?

A. Why, they are more dangerous than if they would not multiply.

Q. All right. Now let see, with nitrites such as are in flour, say if they will multiply, sometimes certain substances which are denominated poisons, are referred to as having this, that or the other degree of toxicity, it that right?

A. I think that is right yes sir.

Q. You know that is so, the toxicity of prussic acid might be one figure or represented by one figure, of corrosive sublimate by another, am I right?

A. Why, I don't know whether toxicologists say that may be or not.

Q. Is it within your knowledge that morphine is a poison sometimes in big doses, or little doses, or appropriate quantities? A. In sufficient doses.

Q. People use it to commit suicide sometimes, don't they?

A. Yes, sir, I guess they do once in a while.

Q. You have heard of that in your business?

A. Why, yes.

Q. It is used as a medicine too, is it not? A. Yes, sir.

Q. It allays suffering and pain? A. Yes, sir.

Q. It comes from the poppy, doesn't it? A. Yes, sir.

Q. Beautiful little flower that we see around the garden?

A. Yes, sir.

Q. It is a dangerous thing, isn't it? A. Morphine?

Q. Yes. A. In certain quantities.

Q. Yes, but it is dangerous because of the effect that it produces you want more and more and more?

2075 A. Why, I would say in sufficient quantities it is a dangerous thing.

The Court: That is not the question.

Q. Is not the morphine habit the worst thing in the world that you know of? A. I couldn't say that it is.

Q. Do you know of a substance called apo-morphine?

A. Yes, sir.

Q. That is the ordinary morphine with one molecule of water taken out, isn't it? A. I don't know.

Q. Now that is a powerful emetic, isn't it? A. Yes, sir.
Q. And one of the best known and commonly used?
A. I think it is.
Q. Now then if you treat morphine with nitrites will not the toxicity that is the degree of poisonousness of the morphine be multiplied?
A. I don't know that it is.
Q. To 600 per cent.

Mr. Elliott: If your Honor please I object to this question as not proper cross-examination, not based on any testimony in this case.

Mr. Butler: The redirect examination brought out that the typhoid germ might multiply. I am going to find out that these nitrites will multiply the toxicity of other things, if he knows I will.

A. I don't know.

The Court: He says he don't know.

Q. Now, isn't it well known to medicial men that treatment of other substances may, and very often does, increase the toxicity of one or the other or both?

Same objection by claimant.

The Court: You may answer.

A. I don't think it is.
Q. Why, isn't it laid down everywhere that that is true?
A. I don't think so.
Q. You never heard of the toxicity of substances being affected by treatment in any way?
A. I don't remember now that I have heard it.
2076 Q. Well, now, will you undertake to say that it is not true that the toxicity of apo-morphine used for emetic will be increased 2,000 per cent by nitrites such as are in the bread made from bleached flour?

Same objection.

The Court: He may answer.

A. I wouldn't say; I don't know.

The Court: He says he doesn't know, no use pursuing that.

Mr. Elliott: That is all, Dr. Albert.

Charles A. Rex, called as a witness on the part of Claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

By the Court:

Q. What is your name? A. Charles A. Rex.

Q. Where do you live? A. Lexington, Missouri.

By Mr. Elliott:

Q. What is your occupation?

By the Court:

Q. You were sworn, weren't you? A. Yes, sir.

By Mr. Elliott:

Q. What is your occupation, Mr. Rex?

A. Why, I am manager of the Lexington flouring mill four or five years.

The Court: Lexington, Missouri.

A. Lexington, Missouri.

Q. Tell me when you were connected with that mill?

A. In '93.

Q. Up to what time? A. '97.

2077 Q. Up to when? A. The first of May 1907.

Q. 1907—during that time was there an Alsop process machine installed in the mill? A. Yes, sir.

Q. I hand you Claimant's Exhibit 268, a piece of rubber tubing, and ask you if that piece of tubing was one that was placed on the machine when it was installed in that mill?

A. Yes, sir.

Q. Was it on that machine when you left the mill in 1907?

A. Yes, sir.

Q. Now I hand you a piece of pipe which we will have marked "Claimant's Exhibit 269" (which was accordingly done) and ask you if that was a piece of pipe that was connected with the Alsop apparatus when it was installed?

A. Yes, sir, it was a nipple that goes right in the reel.

Q. A nipple that goes right into the reel?

A. Yes, sir, that the air goes through.

Q. And was that on the machine, are you able to state, when you left the mill? A. Yes, sir.

Q. In 1907? A. Yes, sir.

Mr. Elliott: These exhibits are introduced in evidence.

Q. That is all, Mr. Rex.

Cross-Examination

By Mr. Butler:

Q. Are you still with this mill? A. No, sir.

Q. What are you doing?

A. Well, my brother and myself owned a controlling interest in this mill, and we sold it in '7, our interest, for some land in Kansas.

The Court: I can't hear you, Mr. Witness.

Q. You say you and your brother sold something?
A. Sold our interest for some land in Kansas.

By Mr. Butler:
Q. Where did you get these exhibits?
A. Got them out of the mill Friday.
Q. Last Friday?
A. Got them out of the mill Saturday.
2078 Q. Has the mill been running ever since or do you know anything about that? A. Not all the time.
Q. Has it been running any during the last three years?

Mr. Elliott: I will state that I am going to bring in the gentleman who succeeded him, if that will help you any.

The Court: Very well.

Q. Who sent you out there to get these things?
A. Why, I have lived there in town, I went out there to get them.
Q. Who sent you? A. Nobody particular.

The Court: Tell who sent you, if any one?

A. Nobody sent me out to get them, I got them off the machinery and got them Saturday.

By Mr. Butler:
Q. Without anybody telling you to? A. No, sir.
Q. Just thought you would bring those in of your own accord? A. Yes, sir.
Q. That just came in your head; you are not in the milling business? A. No, sir.

Redirect Examination

By Mr. Elliott:
Q. I forgot to ask you, Mr. Rex, how long had that piece of rubber and that piece of pipe been in use when you left the mill?
A. When I left the mill we had had it in there in four, the spring of four, and I left in seven, five, I think, five it was.
Q. It was put in—
A. Put in there in five and I left there in seven.
Q. Well, substantially two years? A. Yes, sir.
Q. It would be a little over two years, wouldn't it?
A. A little over two years.

Recross Examination

By Mr. Butler:

Q. How big a mill is that, any way, what is the capacity of the mill. A. 200 barrels.

Q. How much did it make during the last year you ran it?

A. We increased it and made it a little over 200 barrels.

2079 Q. How much did you put it? A. About 220 barrels.

Q. And the year before that? A. 200 barrels.

Q. And the year before that?

A. Well, it was put in there for 200 barrel mill.

Q. Well, did you run full capacity for each year?

A. No, after we increased it made more.

Q. Well, you ran more than 200 on the average all the time? A. Yes.

Q. How many horse power did you use to make this gas to bleach flour with?

A. I think three and a half horse power dynamo.

Q. Wasn't it five? A. No, sir.

Q. Wasn't it three and a half kilowatts instead of horse power?

A. I ain't no electrician, I don't know nothing about that.

Q. Don't know anything about it; don't know how much nitric acid that made that passed through these pipes?

A. No, sir.

Q. Did you bleach all the time? A. Sir?

Q. Did you bleach all the time? A. Yes, sir.

Q. Bleach everything? A. Every day.

Q. Labeled it all patent, did you bleach everything?

A. No.

The Court: You don't speak so people can hear you.

A. We just bleached 80 per cent, 85 per cent of it.

Q. Never mixed it in your mill?

A. No, sir, not while I was there.

Q. It spoils low grade flour to bleach it, doesn't it?

A. I don't know, I never bleached any.

Q. You found out that this machine was a kind of machine that will only bleach good flour, did you?

A. No, sir, I did not find that out.

J. F. Forster, called as a witness on the part of claimant, being duly sworn, testified as follows:

2080 Direct Examination

By Mr. Elliott:

By the Court:

Q. You were sworn a while ago by the clerk?

A. Yes, sir.
Q. Where do you live? A. Lexington, Missouri.

By Mr. Elliott:
Q. Did you succeed Mr. Rex at the Lexington Mills?
A. Yes, sir.
Q. I hand you this Claimant's "Exhibit 268" and ask you if you are able to identify it as the piece of tube that was on the —rubber tube that was on the machine when you took charge of the mill? A. Yes, sir.
Q. Now how long have you been in charge of that mill?
A. Since June 1907.
Q. June 1907, and has that rubber tube been on there ever since? A. Yes, sir.
Q. Up to the present time? A. Yes, sir.
Q. I hand you "Claimant's Exhibit 269" and ask you if you are able to identify it as a piece of pipe from the machine that was on it when you took over the mill? A. Yes, sir.
Q. How long has that been on there?
A. Since June 1907.
Q. Up to the present time? A. Yes, sir.
Q. Have you been bleaching flour right along?
A. Every day that it has been running.
Q. Have you ever noticed the effect, Mr. Forster, of new wheat flour by bleaching it?
A. It produces the same effect in baking as old wheat flour; it will make the same kind of biscuit as the old wheat flour biscuit.
Q. Have you ever noticed the color of the gas of this Alsop machine? A. Yes.
Q. What is your opinion as to whether it has color or colorless? A. The gas has no color that I have ever seen.
2081 Q. Has no color. Have you ever noticed any odor to be imparted to flour by bleaching it by this Alsop process? A. No, sir.
Q. Have you ever made comparisons between bread from bleached flour and bread from unbleached flour to see if there was any difference in the taste and smell? A. Yes, sir.
Q. What is your opinion?
A. There is no difference that I could detect.
Q. To what class do you sell your flour?
A. Southern trade, biscuit makers.

By the Court:
Q. Sir?
A. Biscuit trade, southern trade requires a biscuit flour.
Q. What kind of flour? A. A flour that makes biscuits.

By Mr. Elliott:
Q. You grind usually soft wheat flour, I believe?

A. Yes, sir.

Q. Has your trade to your knowledge expressed any preference for one kind of flour produced by you over another and if so state what?

Counsel for Libelant objects to the question as immaterial.

The Court: He may answer.

A. They prefer the bleached flour, the kind I have been giving them.

Mr. Butler: I move to strike it out as not responsive, giving his conclusion.

The Court: That is not responsive.

Q. I just say if they have expressed a preference?

A. They have expressed a preference for the kind of flour I have been giving them which is bleached flour.

Q. Now does your trade know that you give them bleached flour? A. Yes, sir.

Counsel for libelant objects to the question as irrelevant.

The Court: Well, it may stand. We are getting a whole lot of hearsay testimony in here.

Q. What grades of flour do you bleach, Mr. Forster?

A. The best grade.

Q. I will ask you to what extent color of flour is an indication of quality? A. A secondary consideration.

2082 Q. It is what? A. A secondary consideration.

Q. It is a secondary consideration. Well, what would you say were the first considerations then, if I understand you?

A. Why, the baking quality is the first consideration in any flour.

Q. Any other?

A. Well, the texture of the flour it gets, the baking flour.

By the Court:

Q. The what? A. The texture of the flour.

By the Court:

Q. Has the granulation of the flour anything to do with its quality? A. Yes, sir.

By Mr. Elliott: (Resuming)

Q. I believe that is all—just one minute—I will ask you if the balance of the pipes to your knowledge are in the same condition as the pipe that you have shown here?

Mr. Butler: I object to that as not the best evidence, calling for a conclusion; he ought to have brought them if they are important.

The Court: He may answer.

A. Yes, sir, as far as I know they are in the same condition as that pipe.

The Court: Now, Mr. Witness, is that the best you can do by way of being heard?

Mr. Elliott: Speak louder.

A. So far as I know that is the same as all the rest of the pipes in the mill.

Cross-Examination

By Mr. Butler:

Q. This "Exhibit 269" is a pipe about 5 inches long, and has some threads on each end of it. Since Mr. Elliott handed it to you just now, I have taken a little file that seem to be laying around this court room and scraped out some substance out of it which I have on this paper which we will mark "Government's Exhibit 56" (which was accordingly done).

Do you know what that is? A. Scraped out of there?

2083 Q. Yes. A. Dust out of the pipe.

Q. Did you ever clean out your pipes out there in the years you have been at that mill? A. Yes, sir.

Q. How often? A. Once every six months.

Q. What for?

A. To get the dust out of them.

Q. That is reddish brown dust?

A. Yes, sir, as far as I know.

Q. Is the dust always the same kind of dust as there is in "Exhibit 47" which was taken out of Krites' pipes, isn't it?

Counsel for claimant object to the question as calling for a conclusion.

Q. I will say to you, Mr. Witness, the evidence shows it was taken out of Krites' pipes. I show you some of the dust in 47, that is the kind of stuff you get out of pipes, do you?

A. Not that brown.

Q. Not quite so brown you think? A. No, sir.

Q. A little lighter color, about the same you think as that that I got out of your ppes that you brought into court, did you clean them out since you brought them into court some?

A. No, sir.

Q. Not a bit? A. No, sir.

Q. How much did you get out of your pipe system each six months?

A. I don't clean the pipes myself.

Q. When you go down about 10 or 15 feet of pipe and dust them out?

A. I don't know how much we get out of it.
Q. Do you clean out your drum?
A. No, sir, we have no drum.
Q. You shoot right into the flour direct?
A. Shoot right into the flour.

By the Court:
Q. You have no midway drum? A. No, sir.

Q. No place to delay it at all? A. No, sir.
Q. But notwithstanding that, you have to clean out your pipes every six months?
A. We get the dust that takes up in the agitator 10 or 15 feet back in the agitator.
Q. I see. The wind blows into the agitator, doesnt it?
A. Yes, sir.
Q. This dust backs up against the wind?
A. Yes, sir.
2084 Q. The dust backs up against the wind there?
A. Yes, sir.
Q. Don't smell of this gas ever, do you?
A. No, sir.
Q. The gas on the Alsop bleacher that you have got is odorless?
A. I can't say that it is. I never smelled of it.
Q. Well, in the years that you have been there you have not been able to smell it?
A. Not in the agitator.
Q. Anywhere about the mill?
A. No, sir—yes, I could smell it in the bin, in the flour bins.
Q. I thought you said the flour did not smell of it?
A. Well, the flour I never smelled it on the flour after you go through the packer.
Q. After you go into the room where the flour is you smell it? A. Yes, sir.
Q. And you say therefore the room smells of it but this flour does not? A. Yes, sir.
Q. I see. You cannot smell the gas itself, nor you couldn't see it itself, nor you couldn't smell it on the flour, but you could smell it in the other room where the flour is kept in?
A. Oh no, right in the flour bin before it goes into the sack.
Q. I mean before it is sacked up? A. Yes, sir.
Q. So in other places that flour is you can't smell the gas until you get the flour in sacks and tied up the sacks, is that true?
A. You can only smell just right below the agitator.

Q. As soon as you took it out and tied up the sacks you could not smell any more?
A. No, take it up in your hands you can not smell it any more.
Q. And flour if it is not bleached, begins to change, processes of decay, set in, don't they?
A. No, sir, not necessarily.

By the Court:
Q. I can't hear.
A. No, I don't know that it decays.

Q. You don't, doesn't it begin to change right off?
A. Yes, sir.
Q. Well, that is the process of decay, isn't it, keeps on going until it is no good, full of bugs and weevils and everything?
A. Yes, sir, if it is not taken care of.
Q. And by this bleaching process you can change it
2085 in a few seconds such as nature will change it in a long time, in months? A. Yes, sir.

By the Court:
Q. Sir? A. Yes, sir.

By Mr. Butler:
Q. Make it taste the same as three months' decay of wheat?

Mr. Elliott: I object to that, Your Honor, no one has given any such testimony that three months causes flour to decay.

The Court: Go on.

Q. This decomposition that goes on in everything makes flour taste better, makes biscuits taste better, until it gets to certain point?

Mr. Elliott: That I object to because this witness is not a chemist and does not know anything about decomposition.

The Court: He may answer it.

A. Flour that is left in a warehouse for a time improves in baking quality.
Q. Yes, yes, and it keeps on improving for a certain time and after that goes down the hill?
A. No, not necessarily.

By the Court:
Q. What? A. No, sir, not necessarily.

Q. Flour will keep indefinitely unbleached?

A. Yes, sir, if it is kept clear, that is bugs or anything like that, if you take care of it, won't get bugs in it.

Q. Good for ten years, is it?

A. If it is well kept, yes, sir.

Q. Did you ever keep any for ten years? A. No, sir.

Q. Or for five? A. No, sir.

Q. Or three? A. No, sir.

Q. Or four or two?

A. I know of them that have, yes, sir.

Q. Did you ever keep any for two years?

A. No, sir.

Q. Why don't you know that the life of flour is probably less than a year, as a commercial matter? A. No, sir.

Q. How long is the life of flour, as a commercial matter?

A. I don't know, I never keep any flour on hand for any length of time.

Q. Are you the man who personally cleaned out these pipes? A. No, sir.

2086 Q. Have you seen them cleaned out? A. Yes, sir.

Q. How many times? A. Two or three times.

Q. What is this stuff in this which is removed, this black stuff? A. I don't know what it is.

Q. Is that dust from the agitator too?

A. That is the pipe that comes right off from the machine.

Q. I know, but this black stuff, that is as black as anything, on the inside of that, what is it?

A. I don't know what it is.

By the Court:

Q. Where did that come from—from the electrifier?

A. Yes, sir, right next to the electrifier.

Q. And the pipe from there to the agitator is a galvanized pipe? A. Galvanized iron pipe.

By Mr. Butler:

Q. What made that rubber there break in two?

A. The heat, I presume.

Q. You see that it is black and ruined, don't you?

A. Yes, sir.

Q. What is that? A. Yes, sir.

Q. That pipe was cleaned out before it was brought to this court, wasn't it? A. No, sir.

Q. What are these marks running down through it?

A. I haven't noticed any marks.

Q. Now, let me see, Mister,—your name has gone from me— A. Forster.

Q. That pipe was covering metal down to where my finger is, to that end, wasn't it?

A. Yes, sir, there is a mark of the clamp.

Q. And on the other end it was covering metal down as far, down to where my other thumb is, wasn't it?

A. No, sir, no, that hose is four or five feet long.

Q. Why didn't you bring it all in?

A. Because they cut it off, whoever took it off, I didn't bring that in.

Q. Oh, I see, I see it is only a piece of the hose that was used? A. That is part of the hose.

Q. And it was cut in two for the purpose of bringing it to court? A. Evidently, yes, sir.

Q. Who did that?

A. Mr. Rex got it off the machine, I think.

2087 Q. Who got you to come down; did you just come down of your own accord? A. I volunteered, yes, sir.

Q. Just volunteered. Now, can you go back and bring back the other piece of that hose? A. Yes, sir.

Q. Will you volunteer to do it?

A. Why, yes, sir, if I can in time.

Q. Will you do it by my request, go back and bring back the rest of the hose? A. No, sir.

By the Court:

Q. Can't you telephone down for it?

A. Yes, sir. I could telephone for it.

By the Court:

Q. Send it up by express, or some other convenient way?

A. It will come up tonight or tomorrow.

By Mr. Butler:

Q. All right. Just mark it with your name. Wasn't there any piece of pipe longer than this five-inch pipe to bring along? A. Yes, sir, that is a part of it.

Q. Isn't there any more, that is most all covered with scars? A. That is the nipple connecting the agitator.

Q. How many agitators have you? A. Two.

Q. And this only took part of the gas that went through the mill? A. No, sir, we only use one.

Q. You only use one; what do you have the other one in for? A. Put in there, we get it when we get the two.

Q. You don't bleach anything but your best grades either, do you? A. No, sir.

Q. This nipple was off of the one that you use or off the one you don't use? A. I don't know.

Q. That is all.

Redirect Examination

By Mr. Elliott:

Q. Mr. Forster, is this Alsop installation a closed system, as it were, from electrifier to the agitator? A. Yes, sir.

Q. That is, any gas, or whatever it is produced from,
2088 goes through pipes? A. Yes, sir.
Q. To the agitator? A. Yes, sir.
Q. So that if there was any smell to the gas ordinarily, or as a fact, you would not be able to detect it until you get it down in the flour bin? [Q]. Not unless exposed to the air.
Q. And unless you get to it, unless you open the agitator, open some part of the machine? A. Open the pipe some place.

Recross Examination

By Mr. Butler:

Q. And so you couldn't see it either until you open it?
A. No, sir, you couldn't see the gas.
Q. Therefore you say it is invisible because it is in the pipe? A. I never did see the gas.
A. And therefore you testify that it was invisible gas because it was in the pipe?
A. No, it is invisible in the flour mill, you can smell it, but you can't see it.
Q. You mean after it goes through the agitator and after it has bleached the flour and after it has gone down into the flour bin it is then invisible?
A. That is the only place you know.
Q. It is invisible in the dust of the flour?
A. Oh, yes, I should think it would be.

Dr. Albert W. Rockwood, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Q. What is your name? A. Albert W. Rockwood.
2089 Q. Where do you reside? A. Iowa City, Iowa.
Q. What is your occupation or profession?
A. I am professor of chemistry and toxicology in the University of Iowa, head of the department of chemistry.
Q. I will ask you, Doctor, to state your qualifications as a chemist and toxicologist.
A. Graduate Amhurst College where I studied chemistry. After that a student at Leipsic, Gottingen, Strasburg, Germany; Hale University I received the degree of Ph. D. for work on chemistry; and have been for over twenty years instructing in the University of Iowa.
Q. Have you made some investigations, Doctor, in reference to the subject of flour bleaching?
A. Not the bleaching process.
Q. No, I mean with bleached flour, I mean.
A. I have made some tests with bleached flour, yes, sir.
Q. Have you made any tests to ascertain as to whether one flour containing a certain amount of nitrite re-acting material

is baked into bread with the use of yeast, there is or is not a disappearance of such nitrite re-acting material?

A. I have made some tests in that line.

Q. Will you please tell us what you have done?

A. I first determined the amount of nitrite material in the flour, then had the bread sponge mixed up by the use of yeast in the ordinary way, and after it was raised the usual time tested it for the presence of nitrite re-acting material.

Q. And with what result?

A. Very commonly the nitrite reacting material had disappeared, it was always much reduced, sometimes after the usual time of bread raising a part remained, but on longer standing, a few hours longer standing, they also disappeared.

Q. Now, do I understand that you tested the dough before it was put into the oven?

A. They—might before it was put into the oven.

Q. I will ask you if you have made any experiments to test the relative digestibility of flour, bleached and unbleached? A. I made a number, yes, sir.

Q. And with what constituents of flour have you dealt?

2090 A. I have tested the digestibility of the starch of the flour made by the salivary ferments and the pancreatic ferment; I have tested the digestibility of the gluten of the flour by the pancreatic and the gastric digestion.

Q. Is that the same as pepsin, the gastric?

A. Pepsin hydrochlroic acid together, yes, sir.

Q. Now, first I will ask you to tell us, take up the starch, and take a representative experiment, if you have one, and give us some figures as to what you found on the digestibility of starch with saliva?

A. Does that include the method?

Mr. Butler: There never has been any testimony that starch was made indigestible as such.

Mr. Elliott: I don't know whether there is or not.

Mr. Butler: I don't think that there will be any against that introduced; Now, I suggest that perhaps if that is true we need not spend very much time on starch?

Mr. Elliott: Do you concede that the starch is not retarded in its digestion?

Mr. Butler: You have called witnesses on the subject of starch and we have not called any to the contrary, and don't expect to.

The Court: Go on.

By Mr. Elliott:

Q. Go on with the experiments with starch, Doctor, and tell us what you found; first tell us how you performed the experiment.

A. The experiment was performed by boiling up flour with water and then adding to it small quantities of saliva.

Q. Give us the quantities as you go along, Doctor, how much you used of everything.

Mr. Butler: If you intend to call out details let it be complete so I won't have to go over it again.

By Mr. Elliott:

Q. Just give us the details, now, one of these experiments is representative of the other.

A. I will give you such details as I have here; I have not the details in each case of the amount of flour and water that I took, but it was—well, it was from two to ten grams of flour to the liter of water.

2091 Q. Well, now, detail one experiment to us and give us such details as you have. A. And added to this—

Mr. Butler: Well, on the particular one, can he give specific amounts for any particular one?

A. I have here simply the results of speed of digestion.

Q. Well, what we want, can you in any case give us the amount of flour you used and how you made this solution, and everything of that sort?

A. I can say that in one of these, I don't remember which one, there was four grams of flour to a liter of water, that will be included in these results. Then I added to that, I used the bleached flour for one test, the same quantity and unbleached flour treated in the same way for a parallel test.

Q. Let me put it this way: Wherever you made comparison between the bleached and the unbleached did you use the same quantities and amounts and so on?

A. The same amount and quantities, treated it as near as I could possibly do it in the same manner.

Q. All right. Now, you can proceed.

A. Added to the flour solution the same quantity of saliva and a small amount of the solution of iodine, which produces a blue color, the speed of digestion can be determined by the disappearance of this blue color.

Q. That is with the saliva? A. With the saliva.

Q. Now, tell us what was the result of these saliva experiments?

A. The results in general were that the color disappeared with the two kinds of flour in practically the same amount.

Q. Tell us what kind of flour you had there, Dr. Rockwood?

A. Used the Lexington flour.

By the Court:

Q. Lexington, Nebraska?

A. Lexington, Nebraska. There were nitrites in the bleached and there were none in the unbleached.

By the Court:

Q. Used this seized flour?

A. I think it was not a portion of this seized flour.

By Mr. Butler:

Q. How much nitrites?

A. There was .91 of a part per million of nitrite nitrogen.

Q. Both patent flours, the same kind of flour, or different kinds?

2092 A. I asked to have the same kind of flour sent to me; I am not a judge.

Q. Both new or both aged, or one aged and the other new?

A. I cannot certify anything about the grade of the flour.

By Mr. Elliott, resuming:

Q. You obtained flours which you believed to have been the same flours bleached and unbleached; is that correct?

Mr. Butler: I object to what he believed about it.

The Court: This gentleman says he does not know, as I understand him.

By Mr. Elliott:

Q. You received these samples of flour, did you?

A. Yes, sir.

Q. From the Lexington Mill?

A. Lexington Mill & Elevator Company.

Q. Yes, all right. Now, proceed, and how much nitrite re-acting material was in the bleached flour?

A. .91 of a part of nitrite nitrogen.

Q. .91? A. Per million.

Q. It is a little less than one part per million.

A. A little less than one part per million.

Q. Did you ascertain that the unbleached had no nitrite?

A. Had no nitrites in it.

Q. Now, then, you can proceed.

A. The time which was required for this blue color to disappear was practically the same in all cases, that is, with two parallel experiments, one unbleached and the bleached flour were treated in exactly the same way under exactly the same conditions.

Q. Now, with the pancreatic?

A. With the pancreatic the operation was carried on in a similar way with the substitution of the pancreatin which contains the pancreatic ferments for the saliva, and similar results were obtained.

Q. Now, did you make any experiments with regard to the digestibility of the gluten of these flours?

2093 A. I tested the digestibility of the gluten by the pepsin hydrochloric acid, and by the pancreatic ferments.

Q. Now, take the pepsin and give us the result.

A. I tested the gluten in a moist condition uncooked, and I also tested the gluten after I had steamed it dried it and made it with the pepsin hydrochloric acid. Do you want the figures?

Q. Yes, you better give us some figures. Now, this is with pepsin, is it?

A. This is with pepsin, moist gluten.

Q. And moist gluten, all right.

A. Where the digestion was carried on one hour and ten minutes at body temperature, the bleached flour digested 16.6 per cent; the unbleached flour 11.6 per cent. Where it was digested two hours and thirty minutes the bleached flour digested 19.2 per cent. The unbleached flour 14.7 per cent. Where it was digested three hours and thirty five minutes the bleached flour digested 28 per cent and the unbleached flour 26.8 per cent.

By Mr. Butler:

Q. The bleached was more digestible in both cases, very much more?

A. Oh, the bleached was the more digestible.

Q. That is what I say, the bleached?

A. Somewhat more digestible.

Q. Well very much more, isn't it? A. Oh, I don't—

Mr. Elliott: You can ask him that later.

By Mr. Elliott:

Q. Give those figures again, Mr. Rockwood; give us the three times again with the percentage?

A. The whole thing again?

Q. No, just those percentages you gave us.

A. One hour and ten minutes, bleached 13.6, unbleached 11.6. Two hours and thirty minutes, bleached 19.2, unbleached 14.7. Three hours and thirty five minutes, bleached, 28; unbleached 26.6.

Q. Now, did you make any experiments with dry gluten and pepsin? A. Yes, sir.

Q. Give us that.

A. The dry gluten and pepsin, in thirty minutes, the bleached digested 67.3 per cent; the unbleached 62.4 per cent.

2094 By Judge Helm:

Q. That is in twenty minutes?

A. Thirty minutes. In one hour the bleached digested 74.6 per cent; the unbleached 72.1. In two hours the bleached digested 91.7 per cent; the unbleached 89.1.

By Mr. Elliott:

Q. Now, then, as I understand your figures that with the pepsin digestion with moist and dry gluten in both instances your figures show that the bleached flour digested a little—somewhat more rapidly than the unbleached, is that correct?

A. I think it will show that it digested somewhat more completely than the unbleached.

Q. Now, tell us, Dr. Rockwood, what was your means of making the determinations of digestion?

A. I determined the amount of nitrogen and it became soluble in this process, the pepsin and the pancreatic ferments both digest the gluten, which is a nitrogenized substance, and I determined the amount which was flour in solution and the amount which remained in a insoluble form; the soluble nitrogen I call the part which it digested and the insoluble part the part which it had not digested.

Q. Now, how about gluten with the pancreatic digestion? A. That I have given.

Q. I thought that was with pepsin.

A. Well,—oh, you are correct. With the pancreatic digestion with moist gluten digested for one hour the bleached digested 1.7 per cent; the unbleached 2.8 per cent.

Q. That is a little more for the unbleached there, is it?

A. That is a little more for the unbleached. Digested four hours, the bleached digested 10.5 per cent, the unbleached 8.5 per cent.

Q. That is a little more for the bleached?

A. More for the bleached. Digested five hours, 14.5 per cent for the bleached and 11.6 per cent for the unbleached.

By Judge Helm:

Q. How much? A. 14.5; 11.6.

At this point court took a recess until two o'clock P. M.

2095 Pursuant to adjournment, court met at two o'clock, P. M., Tuesday, June 28, 1910, and proceeded with the trial of said cause further as follows:

Albert W. Rockwood, resuming the stand, was examined further by Mr. Elliott, and testified as follows:

Q. Have you made any experiment, testing the digestibility of dried gluten obtained from bleached flour, as compared with dried gluten obtained from unbleached flour? A. I have.

Q. And you can state that experiment?

A. The digestion with the pepsin hydrochloric acid, in thirty minutes the bleached flour, there was 67.3 per cent digested; of the unbleached, 62.4 digested. For one hour the bleached, 74.5 per cent digested, unbleached 72.1 per cent digested. For two hours, the bleached, 91.7 per cent and the unbleached, 81.9.

Q. All those figures show more of the bleached digested. Is that right?

A. Greater digestibility of the bleached, than of the unbleached gluten.

Q. Now, tell us, Doctor, how many experiments of this kind you conducted?

A. With this flour, or with other flour.

Q. I mean digestive experiments, just in round numbers. Did you make just one experiment, or more?

Mr. Butler: You mean with flour, or with wheat?

Mr. Elliott: Flour, or some constituents of flour.

A. These are all separate tests that I have been reading, but I have made others which gave similar results, with other flour.

Q. Now, as a result of your digestion experiments, I want to ask you, what is your opinion as to whether flour that is bleached is injured, as respects the digestibility.

A. I should say it is not injured, as regards digestibility.

Q. We have had testimony here, with reference to
2096 the occurrence of this nitrite reacting material in certain food products. Some of these were of one kind, some of another. Now, I want to ask you if you have made any investigations to determine the presence of nitrite reacting material in country cured meats. A. I have.

Q. Give us the results.

Mr. Butler: What was that?

The Court: Country cured meats.

Mr. Elliott: That is, as cured on the farm.

Mr. Butler: I think I will object to that as immaterial and irrelevant. I do not see how the digestibility of meats would affect the issue here.

Mr. Elliott: I am not talking about the digestion. I said the occurrence of nitrites.

Mr. Butler: Oh, well, does it make any difference whether saltpetre is used out in the country or in town?

Mr. Elliott: If you will listen to the testimony, you will understand.

Mr. Butler: I think it ought to appear that it has some relevancy to the case.

The Court: I don't know whether they cured it with dry chips, or dry bark, or corn cobs, or what.

By Mr. Elliott:
Q. What kind of meats did you obtain?
A. I tested some smoked ham.

By the Court:
Q. Smoked with what?
Q. What was sent to me by a friend of mine in the country, as smoked ham.

By the Court:
Q. Smoked with what? A. I don't know.

Mr. Butler: This is immaterial and irrelevant, just as these flours are that he has been talking about.

Mr. Scarritt: If your Honor please, the testimony here is that any smoked ham has nitrites in it.

Mr. Butler: Do you expect to contradict that?

2097 Mr. Scarritt: No, sir, but it is immaterial what it is smoked with.

The Court: Go on, but it is sort of indefinite, because I happen to know—I am not offering testimony—that meat, in the country, is smoked several ways. This gentleman does not know how this was smoked.

Mr. Elliott: I am not going to distinguish between them.

The Court: Go on.

By Mr. Elliott:
Q. Give us, Doctor, what you obtained.
A. Smoked ham, in parts per million, 3.2. Smoked shoulder, —that is, the pork shoulder, .66 parts in a million.
Q. What was the first?
A. 3.2 parts per million, smoked ham, and .66 smoked shoulder. Bacon, 1.02 per million, all of nitrite nitrogen.

Mr. Scarritt: Smoked ham is what?

The Court: Go over it again.

By Mr. Scarritt:
Q. Just that one. A. 3.2, smoked ham.

By Mr. Elliott:

Q. Now, have you made any experiments, Dr. Rockwood, to determine the effect on the blood as to production of met-hemoglobin by nitrites taken internally?

A. I made one, yes, sir.

Q. On whom did you make that test?

A. I took the nitrites.

Q. Yourself? A. Yes, sir.

Q. Tell us how much you took.

A. I took eight grains of sodium nitrite.

Q. At one time? A. In four two-grain doses.

By the Court:

Q. Sodium nitrite? A. Sodium nitrite.

By Mr. Elliott:

Q. In four two-grain doses? A. Yes, sir.

2098 Q. And over what period did you take them?

A. The first was about four o'clock in the afternoon, I took two; one after that, five or six; and two the next morning as soon as I got up, and one at ten o'clock.

By Mr. Helm:

Q. That is, you took between four o'clock in the afternoon and ten o'clock the next day?

The Court: Just read the question and answer.

(Question and answer read by the reporter.)

By Mr. Elliott:

Q. Now, I will ask you if you noticed any ill effects from taking it. A. I noticed no ill effects from taking it.

Q. Did you test your blood after taking these nitrites?

A. I did.

Q. How soon after the last dose?

A. The blood was drawn at eleven o'clock, one hour after the last dose.

Q. Now, how did you test the blood?

A. I examined it with the spectroscope immediately, and I found no met-hemoglobin. I let it stand, at body temperature, for three hours and a half after that, and examined again with the spectroscope, but found no met-hemoglobin.

Q. Tell me what the significance of that last is.

A. I thought that possibly it might form slowly.

Q. Doctor, it has been testified here that the body has no defense against nitrites. I want to ask your opinion in respect to that view.

A. I think there is substances present in the body which might protect it, and would protect it against the action of

nitrites; would destroy a moderate amount of nitrites taken into the stomach.

Mr. Butler: What was the substance?

By Mr. Elliott:

Q. What was the substance? A. The substance is urea.

By Mr. Butler:

Q. Urea? A. Yes, sir.

2099 By Mr. Elliott:

Q. What is the action of urea in respect of nitrous acid?

A. Urea is well known to be a substance which will destroy nitrous acid.

Q. And is urea present in the body?

A. Urea is present in the body.

Q. I want to ask you Doctor, assuming that this flour, seized, contains 1.8 parts per million nitrite reacting material, and assuming bread made from such flour contains one part per million of such nitrite reacting material. I will ask you if in your judgment, the eating of such bread could produce harmful effects in the body.

A. Owing to the presence of the nitrite material?

Q. Yes, sir. I mean that, of course.

A. My opinion is that it would not.

Q. I will ask you, on the assumption of the last question, if, in your judgment, that amount, namely one part per million of nitrite reacting material could produce any appreciable effects of any kind in the body.

A. That nitrite reacting material?

Q. Yes. A. My opinion is that it would not.

Cross-Examination

By Mr. Butler:

Q. How much nitrite reacting material, such as will be put in flour by this bleaching process, will render the food made from it injurious to health, if any quantity will?

A. I am unable to say.

Q. Will any quantity? A. Is your question whether—

Q. (Interrupting) Any quantity of nitrites, such as are added to flour by the bleaching process, such as you find by the Griess test, after it comes out of the bleaching machine — will any quantity of that injure the health, if the people eat it?

A. I would like to answer that question, but I will say I am not sure that I know just what that compound is. If I am going to answer, about that compound, which do you mean?

2100 Q. Did you have that compound in mind, in answering Mr. Elliott's hypothetical question, about one part of million? A. Yes, sir.

Q. What did you have in mind? What kind of nitrites did you have in mind in answering that question?

A. I don't know of any kind of nitrites which, in that quantity, would be dangerous.

Q. What is the worst kind of a nitrite that you do know about? A. I suppose such ones as the organic nitrites.

Q. And amyl nitrite? A. Something of that class.

Q. Won't a drop of amyl nitrite produce immediate therapeutic effects, observable—a single drop?

A. Its effect depends much on how it is taken.

Q. Well, if it is inhaled.

A. If it is inhaled, it acts much more markedly, than if taken internally.

Q. A single drop will produce a marked effect?

A. A marked effect.

Q. Might kill a baby?

A. I am unable to say about that.

Q. You will not say it won't?

A. No, I cannot say it won't.

Q. Do you think that kind of nitrite in any quantity however minute, ought to be added to flour, if you have a regard for health?

A. May I ask what you mean by "ought to be added"? Whether it would be harmful?

Q. Having regard to health, I say, ought it, if we have regard to health?

Mr. Scarritt: We object to that question.

A. If I understand the question, I will try to answer it as I understand it, that small quantities, sufficiently small quantities of that, would not injure the flour.

Q. I am not asking you that.

A. Well, I said I did not understand what you meant by "ought to".

Q. Well, having regard to health of the consumers, our babies, and ourselves, and our fellow men, ought any substance like amyl nitrite to be added to flour?

A. Well, have I answered it if I say that sufficiently small quantities would not injure health?

Q. How small would they have to be?

2101 A. I am not able to draw a positive line.

Q. Then, the only thing for a prudent medical man, or a prudent layman, to do, is to keep it out, unless he knows that it is safe to take in, isn't it.

Mr. Scarritt: Same objection.

The Court: He may answer.

By Mr. Butler:

Q. Now, here is a substance—

Mr. Elliott: (Interrupting) Now, let him answer it.

Mr. Butler: I am going to enlarge the question so the Doctor and I will understand it. If you gentlemen will just keep still, I will stipulate that you can have objections and exceptions to every question that I ask.

Mr. Scarritt: All right, with that understanding.

Mr. Butler: That is understood, and I will see if I can get you to keep still.

Q. Now, Doctor, so that we may understand it, you, as a medical man, are unable, with respect to this kind of nitrite that you have just referred to—the amyl nitrite, to tell how much, or how little would be injurious, or to define any quantity however minute, which would be perfectly safe?

A. Well, I do not think I answered that question. I said how much.

Q. How much of amyl nitrite would it be perfectly safe to put in our food, and take it every day, and every time we eat bread, or the products of flour?

A. I think that quantity represented by one part nitrites nitrogen in a million parts of flour, would be harmless.

Q. You think that would be harmless? A. I think so.

Q. Are you sure of that? A. That is my opinion.

Q. Are you so sure of it, that you would add it to the food of the people of this nation?

A. I would be perfectly willing to add it.

Q. To their food? A. To their food.

Q. With your present knowledge? A. Yes, sir.

Q. For what purpose? Why would you like to do that?

2102 A. I did not say I would like to do that.

Q. Why would you be willing to do that?

A. Because I do not think it would do any harm.

Q. Twice that much?

A. I don't think twice would hurt, but I cannot draw the line.

Q. Well, three times? Would you be willing to feed the people of this nation three times that much?

A. I do not think that would do any harm.

Q. Four times?

A. I should not think four times would do any harm.

Q. I am asking you if, with your present knowledge, you would be willing to feed the people of this nation four times as much.

Mr. Scarritt: It is understood we object to that?

Mr. Butler: Yes.

Mr. Scarritt: It is understood the objections are overruled, and that we except?

Mr. Butler: Yes, all understood.

A. Well, I cannot say. I haven't any positive opinion, when you get up in larger quantities.

By Mr. Butler:

Q. Why wouldn't you be willing to put ten times as much in? A. May I explain?

Q. Certainly.

A. I know that large amounts of nitrites do have harmful effects.

Q. Poisonous effects?

A. Poisonous effects, and I am convinced that such ones as we have been talking about, in my opinion do not have, and just where the line between the two comes, I cannot say.

Q. You mean such quantities? A. Yes.

Q. You said such ones, but you meant quantities?

A. Yes.

Q. Now, I think you and I understand each other very well.

A. I hope so.

Q. This substance may be characterized, when associated with a respectable quantity, as a poisonous substance?

A. That is, when you have—by "respectable", you
2103 mean considerable?

Q. Yes. May have a poisonous action? A. Yes, sir.

Q. Now, is it not right, from the standpoint of your profession, which has to do with our safety as a people, is it not right to exclude substances, of poisonous character, from foods, in so far as that may be done?

A. If we had any suspicion that they would be poisonous, they ought to be excluded from the foods.

Q. Now, I am sure you will agree with me that different individuals have different powers of resistance, of any poison. Isn't that true? A. That is true.

Q. Now, for example, let us illustrate that by laudanum. If you go to a drug store and buy laudanum, they will probably put a printed label on it, indicating a dose of, say forty drops, maximum, for adults. That is true, isn't it? A. That is true.

Q. That is a medicinal dose, and not a poisonous dose. Isn't that true? A. Yes, sir.

Q. While the medicinal action may be a poisonous action in its nature—I am not trying to get any point on that. That is true, isn't it? A. Yes, that is probably true.

Q. But, on the other hand, it has been reported, has it not, that death,—and well established by the highest living authorities, who use our language, that one drop of laudanum has been a fatal dose? A. Is that a question?

Q. Yes. Now, that is true isn't it?

A. I don't know about one drop, but I know several drops will act as a fatal dose on small infants.

Q. It would not act?

A. Yes, it would act on small infants.

Q. Now, you are not astonished by my statement, when I say to you, as I read the book, myself, that it is reported by no less an authority than Dr. Haines, who sits here in the court room, for the flour bleachers, that a drop has been proved to be a fatal dose? Now, that seems to you to be reasonable and likely, does it not?

A. That may be correct. I could not dispute it.

Q. Now, that illustrates a general rule, does it not, that substances of a poisonous nature may be taken with
2104 safety by some, but be utterly destructive of life of other in relatively very small amounts?

A. Well, of course, that term "very small" is somewhat indefinite.

Q. Well, I mean very small—forty to one, for example.

A. Well, forty to one, that would be probably true.

Q. Now, doesn't that all argue, with just as much certainty as anything can be argued in your science, in your craft, that the safety of public health requires that poisonous substances shall not be added to food?

A. With the understanding that we could agree on what a poisonous substance is.

Q. Well, now, you and I will agree on that, I think.

A. On that proposition?

Q. Yes.

A. That poisonous substance should not be added?

Q. Yes. Don't they?

A. If we can understand what you mean by "poisonous substances", we will agree.

Q. Yes, sir. Well, now, you do not have any difficulty, in the ordinary walks of life, in making yourself understood by "poisonous substances", do you, when you use the word poison? A. That expression conveys a common meaning.

Q. Popular meaning? A. Popular meaning.

Q. And, within the meaning of the word "poisonous substances" falls strychnine, and nitrites, and nitroglycerin, and digitalis, and thousands of substances that are poisonous, ni-

tric acid and nitrous acid, and gases called nitrogen peroxide and nitrogen trioxide.

A. I should say yes, if you will associate with these terms, in the public mind, reasonable quantities.

Q. Yes, and that, what quantity may be reasonable in the one case, might be very excessive in another?

A. Yes, sir.

Q. That is true, isn't it? A. Yes.

Q. A drop of nicotine may kill? A. It may kill.

Q. A drop of aconite has been known to?

A. I am not certain about the lowest fatal dose of aconite. It is small.

Q. Now, so as to avoid any differences, on account of the different use of words, are we not—now, speaking as laymen, making ourselves very clear,—when we say that they are substances which, by their nature, are poisonous, because
2105 they produce poisonous effects, if taken?

A. I do not think I would agree with you.

Q. You do not think that there are? A. No.

Q. (Handing the witness an exhibit) Then, if I told you that there has been added to that bread some strychnine—I don't say how much, and the presiding judge should meet you tomorrow, and ask you, "Assuming that Mr. Butler told you the truth, was there a poison added to the bread,'" what would you say?

A. If he wanted me to answer as accurately as I could, using scientific language, I should say no.

Q. If you were using common speech of people, upon which you live, and by which we all make ourselves understood, you would say yes, wouldn't you?

A. I said, if associated with that were the idea of a reasonable amount, or considerable amount.

Q. Well, no amount of strychnine is reasonable, in bread?

A. Well, "considerable" amount. I qualified that.

Q. Would there have to be considerable strychnine in bread, before you would say there was poison?

A. Oh, I suppose "considerable" is also indefinite.

Q. Isn't strychnine poisonous? A. Often poisonous?

Q. I asked you if strychnine is poison. Can't you distinguish between a thing and the action? Can't you distinguish between the substance which kills, and the death.

A. Yes.

Q. Now, I am speaking of the substance. We will say, for the purpose of the point, I brought that thing in here full of strychnine. You would say that was a poison, wouldn't you?

A. If it was, I certainly would.

Q. Now, if I divided it in two, you would say there was poison in it, wouldn't you? A. Yes.

Q. And if I divided it again there would be poison in it?
A. Yes.
Q. And so on, to infinity? A. No, sir.
Q. The character of the substance would change by division?
2106 A. Its poisonous character would change.
Q. I am not speaking of its action. I am speaking of the quality of the stuff.
A. I should have to answer it according to my idea of the nature of the poison, what I mean by "poisonous substance."
Q. What do you mean by "poisonous substance"?
A. I mean that a poisonous substance has, for its usual action on the individual, in the quantity in which it is taken, some injurious effects.
Q. Can you mention anything that is not a poison, under that definition? A. I think so.
Q. What?
A. I think if I took an ordinary biscuit, it would not be a poison.
Q. But, in appropriate quantities, it would, wouldn't it?
A. I said, the quantity in which it is taken.
Q. The quantities in which it is taken? A. Yes.
Q. You mean in which it is customarily taken?
A. When I am testifying about a biscuit, I should say that I consider that particular amount of food material. Answer the question for that.
Q. Now, we will say that you promulgated a rule in your house, or boarding house, or passed a law in your state, which says poisons shall not be added to foods, and you found a man making nitric acid and nitrous acid, and strychnine, and prussic acid, mixing it with your flour, and had machines for mixing it up with your flour, and you were asked if poisonous substances were added, could you conscientiously, say no, as to any amount of it? I mean, within your science, now.
A. I could conscientiously say no with some amounts, yes, sir.
Q. And you could always say no, until there was enough in there to hurt somebody?
A. To produce some deleterious effect.
Q. And you could not tell, by looking at the flour, how much that would be, could you?
A. Oh, you probably could not.
Q. You would have to wait until it hurt somebody, wouldn't you?
A. You would have to, or you would have to test it, to see what quantity would produce deleterious effects.
2107 Q. But, when you found the quantity, you could not tell how much would kill a baby?

A. If you tested on enough babies, you might, but that would not be the way I would do it.

Q. You would have no other way to find it out, whether it was poisonous, until you tried it on the baby, and if it killed the baby, it was, and if it didn't kill the baby, or make it sick, it wasn't? Is that the way you would have to find out what is poison, according to your definition? A. No.

Q. How are we going to find out how much of this nitrite that they put in flour by bleaching, is good for it, or will be dangerous to use?

A. I suppose by a considerable series of experiments.

Q. On whom?

A. Well, if I had to make that, I should probably make them on the lower animals in the first place.

Q. Then, if that must be done with flour, it must be done with cream, mustn't it, because they put formaldehyde in cream?

A. If that method of experimentation is to be adopted for all materials, it would have to be done with cream.

Q. So, your idea is, that no such articles should be excluded, on account of the poison added?

A. No, sir, I did not say that.

Q. Wait until I finish. Unless it be shown that that poison be in such quantity that it may injure somebody, and unless that be shown by experiments,—until it has been so shown by experiments that it did, under your definition, you can conscientiously swear there is no poison there? Isn't that a fair statement of your testimony?

A. Well, I don't think it is a fair statement of my position, no.

Q. Let me try it again. You say in this flour that nitrites, in sufficient quantities, are poisonous? A. Yes, sir.

Q. That is the reason you did not take the eight grains at once, isn't it? A. I took the eight—

Q. (Interrupting) I know how you took them, but the reason you did not take the eight grains at once, was because they were poison? A. No, that was not the reason.

Q. You thought it would be too much to make met-hemoglobin, if you took eight grains at once? A. No, sir.

2108 Q. You think it would be more likely to make met-hemoglobin, if you peddled it out over a day or two?

A. No, sir.

Q. Well, why didn't you take it all at once?

A. I took it, because two grains is a very common medicinal dose, for a person of my weight.

Q. I know. What figure does that cut? You were not sick? You were not taking it for medicine?

A. No, I was not sick.

Q. Now, if it is harmless stuff, why didn't you take the eight at once? Why did you look at the dose?

A. I know it already.

Q. You know the medicinal dose? A medicinal dose has a poisonous effect, by nitrites, doesn't it?

A. I don't know about that.

Q. Why, don't you know that the throbbing of the temples follows a medicinal dose, and isn't it laid down in every text book? A. I don't know.

Q. And, by the fall in blood pressure?

A. I know it modifies the blood pressure.

Q. Don't you know that that is poison in action, and that it may be carried on, right then and there, to death, by putting in a little more and a little more until the patient dies, right there?

A. I don't think that is a common use of the word "poison".

Q. I am not asking you if that is a common use of the word "poison." I am asking you if it isn't the same effect, only different in degree. If I took some strychnine, and it convulsed me, and Dr. Haines comes over, and saves my life, because he knows how, I am poisoned just the same as if I died, ain't I? A. Yes.

Q. So, if you take a dose of nitrite of sodium, and your head throbs, and you reel, and your blood pressure declines, and you become sick, but do not die, are you not poisoned?

A. I did not have any of those symptoms.

Mr. Butler: I move to strike that out.

The Court: Yes, that is not an answer.

A. (Continuing) On the supposition that I did have deleterious effects?

2109 By Mr. Butler:

Q. Yes. A. Deleterious symptoms?

Q. The symptoms that are characteristic of nitrites, in medicinal doses.

A. That is, on the assumption the two grains would produce that?

Q. I am not talking about quantities at all.

A. I want to understand your question.

Q. If you take enough to produce these things but not to kill you, you are poisoned just the same as I was poisoned with the strychnine, in my last illustration, aren't you?

A. In my definition—

Q. Call it deleterious, or benign, I don't care what you call it. It is poisonous, isn't it?

A. Not if they are benign effects, I should not call it poisonous, no.

Q. Intoxication is poisonous action by whiskey? A. Yes.
Q. The child made sick by his first cigar, poisonous?
[Q.] That is poisonous, yes, sir.
Q. The boy made drunk by his first glass of beer?
A. Yes.
Q. The patient who is subjected to anesthetic, to have his tooth pulled, or his leg sawed off, it is poisonous, isn't it?
A. I should not call anesthetic a poison.
Q. But you would call [alchol], and a glass of beer?
A. Yes.
Q. When a man is made drunk with chloroform, till he is paralyzed, is it not comparable with the same condition from alcohol? Not comparable?
A. He loses consciousness. It is comparable in that way.
Q. It is poisonous, isn't it? They are both poisonous, the alcohol, and the chloroform, and the ether?
A. I am not in the habit of calling, and do not call chloroform and ether poison.
Q. Suppose they kept right on giving him the ether, and did not let him wake up, is it poison? Suppose it is a dog, and you keep it right to his nose till he dies. Is he poisoned?
A. Well, I don't think I should call it a poison.
Q. You would call him killed, wouldn't you?
A. I would call him killed, if it did not take too long.
2110 Q. But, if you let him wake up, you would think nothing had been done to the dog?
A. I think he would have been rendered unconcious, yes.
Q. But not poisoned? A. Not injured. Not poisoned.
Q. That would not be an injurious effect?
A. I should not consider it so.
Q. It would not be injurious to health?
A. I do not think that, to make him unconscious, would be injurious to health.
Q. Suppose we put enough nitrites in our bread to make us unconscious, a little while after we ate each meal, would that be injurious to health?
A. I should think that it would, yes.
Q. You are not sure about that?
A. I have not proved it.
Q. If this bleaching process adds so much nitrite poison to bread that the eating of it would, after continued use, render people unconscious by the reduction of their blood pressure to such an extent that they would be unconscious temporarily but would revive, and go on about their work, and that thing would be repeated and repeated, and repeated, would you think that would be injurious to health?
A. Well, I could not say positively. I should think it might.

Q. I know, but can't you say that it would be positively a bad thing, for us to have flour treated with it?

A. If enough nitrites should be added to make them unconscious, after taking it?

Q. Yes, in bread, as we eat it.

A. I haven't any basis for positively answering such a question. I should think it might, but I could not say.

Q. Suppose somebody got drunk to the point of paralysis, twice every week, would you think that would be injurious to health?

A. I should think so, yes, sir.

Q. Now, suppose nitrites in flour, added by bleaching, made a man weak, by depressing his blood, a pronounced shock every day, so you say that would be injurious to health?

A. Well, I don't understand just what you mean by that,—"make him weak by depressing his blood."

2111 Q. Depressing the blood, lowering the pressure. I thought you agreed with me that nitrites—

A. (interrupting) You did not say pressure.

Q. Well, I meant blood pressure. Don't be particular about my words. If you lowered the blood pressure, so that the man was weakened almost to sleep, or unconsciousness, and that the bread does it, and the bleaching makes the bread do it, do you think that would render it injurious to health?

Mr. Scarritt: You have not forgotten our contract?

Mr. Butler: No.

Mr. Helm: I don't know whether the court is a party to that contract or not.

Mr. Scarritt: Silence gives consent.

The Court: Go on.

A. I could not say that I thought it was injurious, as stated in that way, no, sir.

By Mr. Butler:

Q. Well, we will pass that. Do nitrites change hemoglobin, or oxyhemoglobin into met-hemoglobin in the blood?

A. They do, under some conditions.

Q. Is this a chemical reaction, subject to the laws which govern chemical reaction?

A. It is a chemical change which goes on.

Q. Is it the result of a chemical reaction?

A. Yes. I think you would call it that.

Q. If that is true, this reaction would occur, would it not, whenever the conditions existed, under which it ever did occur?

A. It would.

Q. Because chemical laws act with certainty, do they not?

A. Chemical laws are statements of facts, and if you mean it in that way, as statements of facts,—a law could not be said to act, but it states facts, which facts are true.

Q. The law of gravity doesn't act?

A. No, but gravitation does.

Q. Well, I know. How much nitrite does it take to
2112 change a molecule of hemoglobin into met-hemoglobin, under proper conditions?

A. I don't know any evidence for answering that.

Q. Would you think a quart of nitrite would change a molecule of hemoglobin into met-hemoglobin?

A. I have no doubt that it would. I have changed it with much less than that.

Q. You have no doubt that the amount of nitrites would not exceed one or two molecules per molecule of hemoglobin, have you?

A. I should think that that might represent it.

Q. Do you now think that it might also be true that one molecule of nitrites might change more than one molecule of hemoglobin into met-hemoglobin?

A. It might, but I have no evidence.

Q. But the chances are they would act, in about like quantities? A. They might.

Q. Do you think it is a good thing, or a bad thing, to change the hemoglobin of the blood into met-hemoglobin?

A. I say there is no advantage to the organism to change the hemoglobin to met-hemoglobin.

Q. There is an injury, isn't there? It injures the blood that is changed, doesn't it?

A. Met-hemoglobin does not have the same function in the body, as the hemoglobin does.

Q. It injures the blood that is changed, does it not?

A. Injures, it in that way, that the met-hemoglobin could not perform the office which the hemoglobin does.

Q. That means it destroys the functions of the hemoglobin?

A. Of the hemoglobin, yes.

Q. It destroys just so much of the blood as is changed, doesn't it?

A. Well, it is in that form, of met-hemoglobin.

Q. And that, carried far enough, will produce death?

A. It will produce death.

Q. And it is the characteristic sign of death, by nitrites poisoning, met-hemoglobinaemia, isn't it?

A. It is, as, in nitrites.

Q. Yes, it is the characteristic. I am going to ask you whether it is the sign or characteristic sign of death by nitrite poisoning.

A. I should say it was a characteristic sign.

2113 Q. And it is the one characteristic sign? The only one that it can be, at all, isn't it?

A. Well, perhaps you and I will agree on it, but, if you have met-hemoglobinuria, it does not follow that death took place from met-hemoglobin.

Q. I mean met-hemoglobin, now.

A. Well, I meant met-hemoglobin.

Q. You said met-hemoglobinuria.

A. I meant met-hemoglobinaemia. That would be no proof, at all.

Q. It might be done by acetanilid? A. Yes.

Q. And what else?

A. In general, oxidizing agents. Chlorate of potash, ozone, potassium ferricyanide.

Q. Did you ever see met-hemoglobin in living blood?

A. No, sir, not in the living blood.

Q. Taken from the living stream?

A. I never have.

Q. Do you know whether that was ever done or not, by anybody?

A. In the literature, in pathological conditions, we have met-hemoglobin in the—

Q. (Interrupting) Well, I know they say it is there, but do you know whether anybody was every bled, and the blood exposed to the spectroscope, and showed met-hemoglobin.

A. I have never personally seen it. I have been taught that that was true.

Q. Is the spectroscope a delicate test, or not?

A. It is, ordinarily, a very delicate test.

Q. How delicate—one to the billion? A. Oh, no.

Q. One to the hundred thousand? Now, one to the hundred thousand is considered very delicate, isn't it?

A. For a good many substances.

Q. How delicate is it?

A. I have never tried to see how small quantities of blood coloring matter I could detect by the spectroscope.

Q. You do not know how delicate it is?

A. I do not know.

Q. Are you prepared to swear that I could not be poisoned to death by nitrite of sodium, if you were sitting here tapping my blood all the time? Are you prepared to swear that you would certainly find met-hemoglobin in my blood, if you kept taking it from minute to minute, exposing it to the

2114 spectroscope? In other words, could I not be poisoned to death before you could find the met-hemoglobin in the blood, by the methods which you employ?

A. In my opinion you could not.

Q. Upon what do you testify that?

A. That met-hemoglobinaemia is one of the characteristic symptoms of fatal nitrite poisoning.

Q. Don't have to change it all, to kill, do you?

A. You would have to change a considerable part of it.

Q. Now, is it not true that at least twenty per cent of the hemoglobin must be changed to met-hemoglobin, before it can be seen by the spectroscope, at least twenty per cent—one half of all?

A. I am not able to say as to that.

Q. And is it not true that very much less than the total will kill?

A. Very much less than the total hemoglobin has been changed into met-hemoglobin?

Q. Yes. Won't you die first. Is it not the truth that, if fifty to sixty per cent of the hemoglobin of the body is changed to met-hemoglobin, is it not true that death will follow in adults, and, in cases of children, a much lower per cent?

A. I could not give the exact per cent, but I am willing to say that serious results would follow, if you changed fifty to sixty per cent into met-hemoglobin.

Q. Well, when you say "serious" results, that is a relative term. That means funerals, and sermons?

A. I say I could not positively say about the fatal limits.

Q. Is it about that per cent.

A. I don't know about that.

Q. Now, all this points with great certainty, does it not, to the wisdom of keeping these poisonous nitrites out of our food?

A. In quantities in which they would be poisonous, I should say it would.

Q. Now, if fifty per cent of my blood would be changed from the hemoglobin to the met-hemoglobin, that would kill me—let us assume that, and you could not say it would not—don't you think one per cent would be undesirable to have taking place every day?

2115 A. I don't think that, if one per cent of that change took place every day, it would mean that it would be fifty per cent, in fifty days.

Q. I did not ask you that. I asked you if it would not injure my health, in all human probability. You say I could have one per cent of my blood destroyed, by poisoning it with these nitrites, every day, and it would not injure me? Is that what you want to say?

A. I want to say that a considerable amount could be changed, every day, without injury.

Q. I asked you, if I poisoned my blood about one per cent every day, by nitrites added to flour by this bleaching process,

if you would not swear you thought it a bad thing, and injurious to health.

A. Well, I will swear that I should not want to have one per cent of my blood changed in that way every day.

Q. Because men at your age and mine don't build up so easily as we used to, do we? A. Probably not.

Q. The blood is the vital stream, isn't it?

A. It is necessary for life.

Q. And it belongs to the individual, doesn't it?

A. Certainly.

Q. And the man who poisons your blood by putting poison in your food is liable to impair your health, isn't he?

A. If he poisons your blood, certainly.

Q. In any degree? In any degree, it will impair your health, and tend to, won't it? A. If he poisons your blood.

Q. Now, nitrite, when it changes the hemoglobin to methemoglobin poisons the hemoglobin so it cannot carry oxygen, doesn't it?

A. It changes the hemoglobin so it cannot carry oxygen.

Q. All right. We will say change it, if you do not like the word "poison". Now, urea defends against nitrites, you tell us? A. I think it would.

Q. How does any medicinal effect take place, if urea is an antidote for it?

A. There has to be a certain amount of urea present, to destroy nitrous acid—

Q. (Interrupting) You do not have enough urea? Is 2116 that the idea?

A. You do not have enough urea in the place where it would be available.

Q. Is there urea in the stomach? A. Yes, sir.

Q. So, when the nitrite would go down by the way of the stomach, it would meet the urea? A. Yes, sir.

Q. And that acts as an antidote? A. Yes, sir.

Q. Is the urea put in the stomach of persons, purposely to meet nitrites? A. I am unable to say.

Q. Who says, besides yourself—what great authority, if any, says there is urea present in the stomach, as a rule?

A. It is present in the saliva and the saliva is swallowed. Therefore, it is present in the stomach.

Q. Oh, yes. The urea destroys nitrites, does it?

A. Urea will destroy nitrous acid.

Q. Will it destroy nitrites?

A. It probably would not destroy—at least I do not know it would destroy nitrites.

Q. Well, you couldn't have nitrites and the urea both, in saliva, if one of them would destroy the other, could you?

A. You probably could not.

Q. That's a sure thing, isn't it?

A. Unless the destruction were slow.

Q. Well, now, who says it is in the stomach? Do you want to say that there is urea in our stomachs? Now, I don't know a thing about this. A. Yes.

Q. All the time?

A. All the time that the saliva is being swallowed.

Q. And it comes from the saliva?

A. Well, part of it comes from that.

Q. Do you say that the nitrites taken in the saliva are not harmful?

A. They are much less harmful than those that are taken other ways.

Q. Because the urea is in the saliva, to counteract them?

A. It would seem to me that the nitrites are destroyed in the stomach.

Q. So, there is a balance of the urea of the saliva, with
2117 the nitrites of the saliva?

A. That would simply be, one to overcome the other.

Q. Then, where does the excess of the urea come from, to meet the bleached flour nitrites, if there be nitrites in bleached flour?

A. Well, I think there is a sufficient amount there in the saliva.

Q. Suppose we doubled the amount in the flour, would there still be sufficient urea? A. I am unable to say.

Q. No? Now, is there urea in the blood? A. Yes, sir.

Q. Will it destroy nitrites in the blood?

A. Urea would probably not destroy nitrites in the blood.

Q. Why?

A. Because urea does not destroy nitrites directly, but only after they have been converted into nitrous acid.

Q. Urea will not act in an alkaline body, will it?

A. Not upon nitrites.

Q. And the blood is alkaline? A. Is alkaline.

Q. So, you have to have the urea in the mouth, where it is not alkaline?

A. Oh, the mouth is alkaline, but the stomach is not.

Q. So, the urea that comes from the mouth meets the nitrites, there, and goes hand in hand with them to the stomach, where the stomach is acid, and destroys them there?

A. I think it would.

Q. And then the urea goes on into the blood, with the nitrites, but does not destroy them in the blood? Is that your idea of the defense against nitrites?

A. It would destroy them in the stomach, but not in the blood, if they were both present.

Q. So that, what other defense is there against nitrites, in nature, except urea, which you have described? Urea is associated with the bladder evacuations, is it not?

A. It is contained there in considerable quantities, yes.

Q. Urine? A. Yes.

Q. Now, what, besides the urine?

A. I am unable to state any other specific instance.

Q. So, then, so far as your learning goes, the only defense that nature has provided against nitrites, or poisoning by nitrites, is urea?

A. That is the only one that I can give, as being likely, in my opinion, to cause it.

2118 Q. You have thought of this matter carefully, of course?

A. Why, I have thought of it, of course.

Q. And the urea will not do it in the mouth? A. No.

Q. It will not do it in the blood? A. Probably not.

Q. Will not do it anywhere, except in an acid solution?

A. That is my opinion.

Q. That is your opinion? And you say that there is sufficient quantity in the stomach to take care of all that comes from saliva?

A. My opinion is that there would be a sufficient quantity.

Q. And would you say also that all that comes from ham, which is three parts to the million?

A. I said that I could not tell, if you increased the amount nitrite nitrogen—multiplied it, just how that would be taken care of.

Q. So, if there was just enough to balance against the saliva nitrites, the system would be defenseless against the ham nitrites? A. If there were just enough.

Q. Or the bleached flour nitrites?

A. I don't know what else there may be there, but I said I could not tell any other defenses.

Q. So far as you know? A. That is right.

Q. Can you give us any authority for urea in the saliva of people who are not afflicted with kidney disease?

A. Wort's Dictionary of Chemistry, states it is found in the saliva.

Q. Is that a medical work? A. It is a chemical work.

Q. When did you first know that? A. A few days ago.

Q. When did you first hear that urea was a defense against nitrites?

A. Well, it is a matter of common chemical knowledge that urea will destroy nitrous acid. It is used for that purpose.

Q. I will ask you to answer my question. When did you first hear, read, or have told to you, or learn that urea in the stomach was a defense against nitrites?

A. It was called to my attention yesterday or the day before, that that was present there—that is, that reaction was called to my attention. I had not thought of it in that
2119 light before.

Q. Who told you that?

A. I think it was Dr. Haines.

Q. Dr. Haines, who sits here in the court room? A. Yes.

Q. Now, until Dr. Haines told you that urea in the stomach was nature's defense against nitrites, you had never before, in all your professional learning, studies, and researches, thought of it in that light, had you?

A. I had known all along that urea would destroy nitrites—nitrous acid.

Q. You mean nitrous acid? A. Yes, nitrous acid.

Q. I know, but I will ask you to answer the question.

A. I had not thought of it in that light, no.

Q. So, having been informed by Dr. Haines, two days ago, that that was nature's defense against nitrites, if added to food, you came before this jury, and told us that in your opinion nitrites, added to food, in quantities suggested here, would be harmless? A. Would be harmful?

Q. Harmless—not injurious to health—justified the use?

A. I should not want to say yes to a question put that way.

Q. Didn't you mean that they were harmless?

A. Yes, but I mean that other part of the question.

Q. But isn't it the God's own truth that, never until a few hours ago, forty-eight, or such a matter, did you ever hear it suggested that urea was a defense to these nitrites; that, having been told that it was, according to the theory of Dr. Haines, who is sitting here, you then came to us, and, as a learned man from a great university, of a great state, told us nitrites in food are harmless?

A. I do not want to say that to the question it was because he told me that that was the defense against nitrites.

Q. But you had never thought of it, before, in all your life?

A. I had never thought of that point before, no.

Q. And, finding out that nitrous acid would be decomposed by urea,—or, you knew that? A. I knew that.

Q. Coupling that with what Haines told you, then you endorsed bleached flour, as described in Mr. Elliott's question? Is that it?

2120 A. Before that, I was willing to say, and did say, that I thought the flour was not injured. Bleached flour is more easily digested than unbleached.

Q. You did not examine it for poisons?

A. I made no chemical analysis, no chemical tests for poisons, no.

Q. Who told you that flour that you used was bleached?
A. The company that sent it to me said that is was bleached, and had nitrites there.
Q. Did you analyze it to see if it was bleached?
A. I made the test for nitrites.
Q. Do you know how to find out whether flour is bleached or not, by analysis?
A. I know the common test for nitrites.
Q. Your experience is that bleached flour shows nitrites?
A. Yes.
Q. And that unbleached flour does not?
A. Ordinarily does not.
Q. Usually does not? A. Usually does not.
Q. You never found any that time, did you, to amount to anything, any more than a mere trace?
A. I found some that was said to be unbleached. I don't know whether it was or not.
Q. Now, did you, in making these digestion experiments establish that the bleached flour digests more rapidly, about thirty per cent, as to its gluten?
A. I do not think it was thirty per cent. It was only a few per cent.
Q. I have, the bleached digestion 15.6, the unbleached 11.6. Calling the bleached one hundred, the other was seventy per cent of that. Thirty per cent, then in the degree of digestion, and the next was 19.2, and 14.3—thirty per cent, or, seventy of the other. Now, that is thirty per cent.
A. I didn't think it was as much as that.
Q. Well, that is what it is, if you take one hundred as a basis? A. I did not calculate it that way.
Q. Now, all of your results practically fell on that side?
A. Yes, sir, they fell on that side.
Q. Now, your conclusion, therefore, is inevitably, that
2121 bleaching improves the gluten and starch of the flour, both wet and dry?
A. Not the starch.
Q. What was the condition of your starch?
A. I found no difference in the starch.
Q. One was twenty-eight and one was twenty-six, wasn't it? A. That was not the starch.
Q. Well, we will let that go. No change in the starch, and improved thirty per cent, as to the gluten, in most of these. What was the cause of that, in your opinion?
A. I am unable to say.
Q. Now, let us turn around to this blackboard. If the coloring matter is terpene, and if the amount of coloring mat-

ter be one hundred-thousandth, and if the bleaching medium acts on the terpene alone, what is it that changes bleached flour, so that the bleaching affects the gluten so that it will digest one hundred per cent while the unbleached digests seventy, or in that rate? What is it, in your opinion, by that process, that improves the digestibility of gluten thirty per cent?

A. I said I was unable to tell what improved it.

Q. Now, do you believe that bleaching does improve it, as a professional man?

A. Why, I believe that those experiments show—that is, in these particular cases. These are the ones I tried, and these are typical of the others,—that it is more easily digested.

Q. Now, if these flours were alike, except that one was bleached and the other was unbleached, as a scientist, you say these things prove—these experiments prove that bleaching improves digestibility, don't you? A. Makes it more easy.

Q. You understood that these flours were the same, except that one was bleached and the other was unbleached?

A. I understood they were the same.

Q. Whoever got you to do it, told you that, didn't they?

A. I asked for that kind of flour. I understood it was sent.

Q. Who requested you to do this, by the way?

A. Mr. Smith, I think.

Q. The lawyer who was in this case?

A. Ed. P. Smith.

2122 Q. Now, your problem was to find out whether or not flour was affected by bleaching, with respect to digestibility? A. Yes, sir.

Q. You were furnished what you understood to be flours exactly alike, except one was bleached, and the other was not?

A. Yes.

Q. And you found, as you have stated, that the bleached flour was thirty per cent more digestible than the unbleached?

A. According to those figures, yes, sir.

Q. Now, that would justify the generalization, would it not, that bleaching improves the digestibility of the gluten of flour about thirty per cent?

A. That is the opinion, that that improves it.

Q. You think it proves that, do you?

A. I think it improves it.

Q. Could that be done without any chemical change in the ingredients of the flour, at all, in your judgment?

A. Unless you had something there which stimulated the digestive enzymes.

Q. Yes, you would have to have chemical action, or stimulation to great activity of the enzymes? A. Yes.

Q. Do you think that NO2 gas stimulates enzymes, or kills them?

A. Why, I would say that probably pure NO2 gas, or concentrated NO2 gas would kill them.

Q. Nitric acid would kill them, wouldn't it? A. Yes?

Q. Nitrous acid would kill them?

A. In reasonable concentrations, it would.

Q. And nitrogen trioxide would kill them?

A. Same way, yes.

Q. Nitrosyl of chloride would kill them?

A. Under the same conditions it would.

Q. Kill bacteria? A. In considerable quantities?

Q. Yes. A. It did not kill them here.

Q. And, to the extent that these things take place, they would act as a preservative?

A. It evidently did not kill them here.

Q. I know, but to the extent that those things would take place, it would act as a preservative, would it not? If you kill enzymic action, and kill bacteria, in food, you preserve it—you embalm it?

2123 A. It tends to act as a preservative, killing bacteria.

Q. Do you think that any of these substances in there, in dilution or any way, would improve the digestibility of flour thirty per cent, or the gluten of flour thirty per cent?

A. Well, I said I could not tell just what that was.

Q. Is it your idea that bleaching improves the digestibility of the flour, because it stimulates the enzymes?

A. I did not say that. I said I could not tell why.

Q. I know, but there must be some reason for it—chemical action or stimulation of the enzymes?

A. I should say so, yes.

Q. Now, you never heard in your life, of any of these substances used to stimulate enzymes, did you?

A. I don't know that I have of [there] particular things.

Q. What is the smallest dose of nitrites you know of, that produces injurious results in the body, as reported, or in your own observation? A. I haven't any figures.

Q. Can you tell us whether or not a grain has ever been known to produce serious effects? A. I am unable to say.

Q. Or three grains, or four or five?

A. I am unable to say.

Q. I suppose you are familiar with Smiederberg's Work on Toxicology and Pharmacology?

A. I know there is such a one. I cannot say I am very familiar with it.

Q. Isn't he a very noted and standard author?

A. He is one man who has a considerably high standing as a toxicologist and pharmacologist.

Q. Isn't he considered as great a pharmacologist as there is?

A. I don't know about that. He is one of the leading pharmacologists.

Q. Recognized as a standard? A. As one of the—

Q. (Interrupting) You studied at Strasburg? A. Yes.

Q. You know Smiederberg? A. Yes.

Q. Now, isn't he regarded as the most eminent living pharmacologists?

A. Well, I am unable to say. I am unable to distinguish—to grade them.

Q. How? A. I am unable to grade them.

2124 Q. Well, you consider him good authority?

A. As we ordinarily use the word "authority". He is a man who has studied those things, toxicology and pharmacology.

Q. Now, doesn't he tell of a case where four and a half grains of sodium nitrite induced in patients very bad symptoms of poisoning, which, however, depend largely upon the change of the hemoglobin into met-hemoglobin?

A. I am unable to say about that.

Q. Well, I have his work here. It is one that is not translated.

Mr. Scarritt: He says he doesn't know.

Mr. Butler: I will call his attention to it. He studied at Strasburg.

The Witness: If he says he knows it, personally, there is no question about it.

By Mr. Butler:

Q. He quotes Ringer and Merril, known since 1883.

A. Then this is based on the word of these other two gentlemen.

Q. Ringer is a great man, isn't he?

A. I don't know Ringer.

Q. Isn't he the greatest authority there is on bloods?

A. I don't know. I do not think so.

Q. Haven't you ever heard of "Ringer's Solution"?

A. I have heard of Ringer's solution, often.

Q. And you say that is not true?

A. Oh, no, I do not say that is not true.

Q. Now, when great investigators, as great as there are living find that four and one-half grains of sodium nitrite, induced in patients very bad symptoms of poisoning, and produced met-hemoglobin in the blood—

Mr. Elliott: (Interrupting) Is that what he says?

Mr. Butler: Which depends largely.

Mr. Scarritt: On what?

Mr. Butler: On the production of met-hemoglobin in the blood.

Mr. Elliott: I did not understand that to say, that produced it.

Mr. Butler: How did you think it gets in there—by
2125 acetanilid?

Mr. Elliott: I am only speaking about this.

Mr. Butler: Well, I am asking the question.

Q. (Handing the book to the witness) You can read the German, and see if that is not there. Doesn't that mean that the poisonous results are dependent upon the met-hemoglobin? Isn't that true. I cannot read the stuff.

A. This is .3, to .6 of a gramme.

Q. It would be four and one-half grains, translated to grains, wouldn't it? A. Five to ten grains.

Q. Five to ten? Four and a half to nine, was what was given to me. Call it five to ten, so as to be on the safe side.

A. Five to ten, pretty near.

Q. Now, that statement is to the effect that the poisonous effect depended, is it not, upon the met-hemoglobin?

A. The formation of met-hemoglobin, yes.

Q. That was the poisonous effect?

A. That is what he says.

Q. That is what I mean. Now, so we will be perfectly clear. That is a reported instance, in that work, of a dose of from five to ten producing grave symptoms in patients, which symptoms were caused by the production of met-hemoglobin in the blood? A. Yes.

Q. Now, Doctor, in your profession, as in ours, of course, your knowledge and information is based upon the work of other men?

A. Yes, in connection with my general study of the subject.

Q. Wouldn't you say that this book which I have just handed you, is a book of standing and repute?

A. It deserves respectful consideration.

Q. Yes, I know—no supreme court about it, or anything like that? A. No.

Q. But it is a good work, is what I am trying to get at.

A. Yes.

Q. There is no one that you know of, that is entitled to greater respect than Smiederberg?

A. I have great respect for him. I studied under him.

Q. And you love his memory, as a great man, do you?
A. I think he is a great man, yes.

2126 Q. Now, as to the saliva. Mandel has translated Hammerstein, "A Text Book on Physiological Chemistry", and there seems to be at Page 287, a description of saliva,—"Salivary Glands and the Saliva" and not a word about urea, is there?

A. I do not think Hammerstein mentions urea as being present in the saliva.

Q. And there is a table of the contents, further on, isn't there? A. Well, I don't remember that he does.

Q. You have looked at this?

A. Oh, I have used Hammerstein.

Q. As a matter of fact, since this theory of urea being a defense against bleached flour nitrites, came to your mind, you are reasonably well satisfied, are you not, that the literature on that subject has been exhausted by you and your associates on that score? You are not testifying snap-shot on that, here, are you?

A. Oh, no. But I wouldn't want to say—I wouldn't want to answer that question that way.

Q. As far as you know, it is?

A. I don't know of any except this—if I may answer the question,—that urea is very readily soluble in water, and is present in the blood, and the blood circulates to all parts of the body, and carries these soluble constituents.

Mr. Butler: I move to strike that out.

Q. I am talking about the urea in the mouth.

The Court: Oh, well.

By Mr. Butler:

Q. Neither one of the flours that you used in your digestion experiments, was the flour seized? A. I think not.

Q. Got up some other kind of flour for you?

A. I don't know anything about that.

Q. Well, it was not the flour seized? A. I think not.

Q. Of the "Purity" flour?

Mr. Scarritt: What do you mean by "They got up some other kind."

Mr. Butler: I mean there was furnished to him some other kind of flour, one of them thirty per cent, more digestible than the other.

2127 Redirect Examination

By Mr. Elliott:

Q. Now, I want you to look at this book that was handed you, Doctor. You read German? A. Yes.

Q. Tell me if that paragraph doesn't read this way: "Doses of .3 to .6 grammes of sodium nitrite produce severe poisonous symptoms, when administered to sick persons, which symptoms were referable, in large part, to the conversion of hemoglobin into met-hemoglobin."

A. That is what it says, yes, sir.

Mr. Butler: I used the word "patient".

Mr. Elliott: I don't know what you used. I am just stating what is there.

Q. I will ask you, Doctor, if this substance, amyl nitrite, which Mr. Butler interrogated you about, is or is not a volatile nitrite,

A. It is a volatile nitrite.

Q. And what kind—is it an organic or inorganic nitrite?

A. Organic.

Q. Do you understand there is any amyl nitrite in flour, bleached by this Alsop process?

A. Not that I know of.

Q. You have been interrogated as respects poisons, and amount and so on. I will ask you if, in your knowledge, this gentleman that you studied under in Strasburg, that has been so highly extolled or any other noted authority, has defined amounts beneath which a substance cannot be poisonous, and if so you may state what.

Mr. Butler: Objected to as improper redirect, and immaterial, and I would like to cross-examine any gentleman whose definitions of poisoning they want to prove.

The Court: Well, I'll tell you, we are spending a great deal of time in this case on the definition of the [work] "poison'.' Now, there is one side saying that strychnine is poison, and there is another side saying it is not poison, except in certain quantities.

Mr. Elliott: That is right.

2128 The Court: Now, I suspect that, some of these times, when we get through in this case, that I will have to tell the jury what the word "poisonous" means, because of the use of the English language. But, both sides are going into it, and I will throw down the bars, and receive all your definitions, and then, some of these times, I will give mine, because the law requires me to give it. The English language

is used in this statute, and we are not very much concerned, I don't believe, in what a lot of lexicographers, arrayed upon one [said], and upon the other side, are going to say.

Mr. Butler: My point was this, if I may state it, in respect to this particular matter. My understanding of the rule is that medical books may not be offered in evidence, subject, however, to the right of cross-examining any expert, you can present him the work that is different from what he says, and ask him if he agrees with the standard work from which he draws his learning. Now, that is not the case here. I did not ask him anything about the definitions of poisons, here, with respect to the authorities, at all. Now, Dr. Haines is sitting here in the court room and has written a large number of definitions of poisons. We will assume, for the purpose of my point, now, may they put on this gentleman—I think perhaps that is what this question calls for—to give the definition by some other eminent man—Dr. Haines, or somebody else—of a poison? Now, I want to cross-examine the man who defines that, to see whether or not we can agree, but I do not think they can put in the books, and let me cross-examine the book, —not under the state of this record.

The Court: The case which I referred to yesterday, and which I found within three minutes after commencing a search for it, was the case of Union Pacific Railroad against Yates, tried before I was on the bench, by Judge Shiras, of the Northern District of Iowa, as I recollect it, sitting at Council Bluffs. I was mistaken when I said Judge Sanborn wrote the opinion.

It was Judge Thayer, speaking for the court, with
2129 reference to scientific books. As I understand it, in this case, the government claims that strychnine and nitrites and nitric acid and prussic acid and a whole lot of other things are poisonous.

Mr. Butler: Yes, sir.

The Court: As I understand it, your side of the case, and your witnesses claim that those are not poisons.

Mr. Scarritt: We claim, Your Honor—

The Court: (Interrupting) Pardon me for interrupting you. As I understand this, your [said] will claim it is not poison unless used in such quantities as to work some physiological harm. Now, I will hear you, Judge.

Mr. Scarritt: I was going to say, we claim that that has nothing to do with this case, and that it is all outside of this case. That has been our objection all the time.

The Court: But, the statute says "If any poisonous substance be added, which may" and so forth.

Mr. Scarritt: Which may be deleterious to health.

The Court: Deleterious, and so forth. Now, it does seem to me,—but I am not seeking to limit you, and do not intend to, but I want my own position made known—it does seem to me we are spending a great deal of time here in making dictionaries out of witnesses.

Mr. Scarritt: I think so, Your Honor.

The Court: Do you recall your question, then?

Mr. Scarritt: No, sir, because the witness has already been made a dictionary, for an hour and ten minutes, and we ought to have some chance.

The Court: Now, I am going to give you a chance. That criticism is unwarranted.

Mr. Scarritt: I beg your pardon. I did not intend to criticize you.

The Court: No. The case I referred to yesterday was Union Pacific Railroad against Yates. The case, originally, was Yates against the Union Pacific Railroad, but, of course, in the appellate court, it was Union Pacific against Yates, 79 Fed., 584. You will find under that decision, that these books are inadmissible.

2130

Mr. Scarritt: I think Your Honor has stated the rule entirely correctly.

The Court: That was a case of medicine, which everybody knows is not an exact science, although every doctor will swear it is.

Mr. Scarritt: Same as chemistry.

The Court: Running down every school except his own. Homeopathists, of course, will not believe what allopaths say, and so on, and so on. I have been watching to see whether chemistry is an exact science, and sometimes during this case I have thought it was, and sometimes I am up in the air about it.

Mr. Scarritt: I have been up in the air all the time. I would like to suggest this, if Your Honor please, that the rule that is laid down there, and the general rule, as I understand it is, that, if the cross-examination does refer to any work which the witness says is a standard work, that then, on redirect examination, you can call the witness's attention to the same work, or to other works that contradict that work.

Mr. Butler: That is the rule as I understand it.

Mr. Elliott: I will withdraw my question.

The Court: I intended to let him answer it.

Recess was then taken for five minutes.

The Court: The witness may answer the question.

Mr. Elliott: I have withdrawn the question, Your Honor.

The Court: Very well.

By Mr. Elliott:

Q. Mr. Butler, Dr. Rockwood, made some statements to you with reference to the effect produced from medicinal doses of nitrites. I want to ask you if these doses of nitrites
2131 which you have testified to taking, were medicinal doses of nitrites.

A. Two grains is the average medicinal dose, for a man of my size.

By the Court:

Q. Why do you keep saying—I don't say you are wrong—but why do you keep saying "A man of my size"? Could a man weighing two hundred pounds take twice as much as a man weighing one hundred pounds?

A. My understanding is that it would have less effect on a muscular man weighing two hundred pounds, than it would on a man weighing one hundred pounds.

By the Court:

Q. Suppose one man is heavy, but soft and flabby, like I am?

A. It would not necessarily act in any proportion to the weight.

By the Court:

Q. Some athlete or foot racer would take more than I would, wouldn't he? A. Very possibly.

The Court: All right.

By Mr. Elliott:

Q. I will ask you, have you personal knowledge of the occurrence of nitrites in the saliva of the human being?

A. I have.

Q. Have you any information that will enable you to tell us, within what range they occur, there? How do they vary in amount?

Mr. Butler: I will object to that.

The Court: He may answer that.

By Mr. Elliott:

Q. Your personal knowledge, I mean.

A. I have tested and seen a great many samples of saliva tested for amounts, and I think that, ordinarily they run—well, the average would be between one and two parts per million.

Q. Can you give us, from your personal knowledge, any figures as to the extremes you have noted?

2132 A. I had my class, last winter, in physiological chemistry, make quantitative tests of their own salivas, each one, and report the result.

Q. What was the maximum quantity?

A. The maximum amount was—

By Mr. Butler:

Q. (interrupting) You did not do that, did you?

A. They did it under my direction. I did not do it.

By Mr. Butler:

Q. Did you see it, and measure it?

A. I saw it done. The maximum amount was 1.6 parts per million.

By Mr. Elliott:

Q. Mr. Butler also questioned you with respect to your recent conference with Dr. Haines, or your recent acquisition, if it were the fact, of the fact that urea in the system may constitute a defense for nitrites, and, as I understood his question, it implied that your opinion that I asked you to express as to the possible harm from eating bread containing this nitrite reacting material, was based on that assumption, that urea would take care of it. Now, I want to ask you if, before this suit, you had not, under oath, stated the same opinion that you have stated to me, that bread made from flour that has been bleached by this Alsop process was, in your judgment, perfectly harmless.

Mr. Butler: Objected to as immaterial. A man cannot justify his opinion by saying he swore it somewhere before.

The Court: Go on.

A. I had made such a statement before.

By Mr. Elliott:

Q. Now, Mr. Butler asked you if, on the assumption that you killed enzymes and bacteria, if it would not be using a preservative. I will ask you if your digestion experiments indicated to you that you had killed enzymes and bacteria.

A. No indications that I had done so.

2133 Mr. Elliott: That is all.

Mr. Butler: I move to strike out his experiments, on the ground that no foundation was laid, for the flour. I understood a promise to be made to connect up, with one sample, but as to the others, they cannot tell whether it is bleached or unbleached. There is no proof of how much nitrite was in it.

The Court: I understood the gentleman to say he knew it had no bleaching applied.

Mr. Butler: No, he did not say that.

Mr. Elliott: Did you test this bleached flour, for nitrites?

The Witness: Yes.

Mr. Scarritt: He stated that in answer to Mr. Butler's question.

The Court: Did you?

The Witness: I tested for nitrites, yes.

Mr. Butler: But he has not said that any of those were bleached or that they were not.

The Court: No.

Mr. Butler: And the proof is that it would go in, four times as fast from the air, if their witnesses are to be believed.

The Court: I will let it stand.

Witness Excused.

Emil G. Beck, called as a witness on behalf of claimants, being first duly sworn, was examined by Mr. Elliott, and testifies as follows:

2134 Direct Examination

Q. Your name, please? A. Emil G. Beck.
Q. And your residence? A. Chicago, Illinois.
Q. Your occupation? A. Surgeon and physician.
Q. Will you give us briefly, your qualification, Dr. Beck?
A. I have practiced surgery in Chicago for the last twelve years. Have done some experimental work in the administration of subnitrate of bismuth in the sinuses and epsis(?) cavities of the body.
Q. By your qualifications, I will state that I want you to give us your studies, and so forth?
A. Well I graduated from the University of Illinois, and took a post graduate course in Europe.
Q. In what place? A. In Berlin.

Q. I will ask you what experience have you had with the administration of sub-nitrate of bismuth?

A. During the past three years I have had considerable experience with it, devoting practically most of my time to the study of the application of it, and have published a large number of books and articles on that.

Q. I will [have] you a pamphlet entitled "Toxic Effects from bismuth sub nitrate," and ask you if you, or your brother Carl Beck is the author of that pamphlet.

A. I am the author of this.

Q. How many cases are gathered together in that pamphlet.

Mr. Butler: That is objected to on the ground that the pamphlet speaks for itself, incompetent, irrelevant and immaterial, because we are not trying sub-nitrite of bismuth.

Mr. Elliott: Dr. Boos gave some testimony in reference to this pamphlet, and says there were 12 cases in it.

The Court: He may answer it.

A. Of Bismuth nitrate poisoning?

Mr. Elliott: The administration. How many cases treated in that pamphlet.

A. Seven cases are treated.

Mr. Butler: Seven treated?

Mr. Scarritt: Seven treated—

2135 The Witness: I beg pardon. Seven histories are given twelve cases altogether.

Mr. Butler: Twelve cases altogether.

A. Yes. Seven histories are given.

Mr. Elliott: There is nothing turns on that, I thought it was seven.

Mr. Butler: There is much turns on that. How is this material?

The Court: I cannot see. I am waiting to see.

Mr. Butler: Are we going into the subnitrate business now?

Mr. Elliott: You have been in every other business.

Mr. Butler: Cross-examination is a different thing from a defense.

Mr. Elliott: Now, take the seven cases whose histories are in there, Dr. Beck, and tell me how many of them are diagnosed there as poisoning by the bismuth.

Mr. Butler: That is objected to on the ground that the book speaks for itself.

The Court: I do not understand this. How are you trying to make this book evidence, Mr. Elliott?

Mr. Elliott: Dr. Boos, when he was testifying referred to this pamphlet as giving twelve cases, as I understood it of nitrite poisoning, and he said they were due to the administration of four and five grain doses of bismuth-sub-nitrate to infants.

The Court: Of course I cannot regulate that.

Mr. Butler: And it was brought out on cross-examination, as I recall it—

The Court: Did you bring this out on cross-examination? Or did Mr. Butler bring it out?

Mr. Elliott: Mr. Butler brought it out on direct examination.

The Court: Of course, I cannot recall—

Mr. Butler: Oh, no—

2136 Mr. Elliott: Maybe I did on cross-examination.

The Court: Now, gentlemen, let us not give or six talk at once. I get so nervous I can almost fly. You get up these contradictions, and I cannot recollect, and I hope we do not find it necessary to go back and examine this record. If you say Mr. Butler brought it out, you may go ahead.

Mr. Elliott: I will not say that positively.

The Court: Judge Scarritt, do you say he did?

Mr. Scarritt: I made a note of it. That is my best recollection. I can look at my notes.

The Court: Go ahead. I do not recollect.

By Mr. Elliott:

Q. How many cases of these seven cases whose histories were given were poisoning by bismuth.

Mr. Butler: Wait a moment.

The Witness: Four.

Mr. Butler: Now, wait a moment, I move to strike that out. I have never been permitted to state my position about a single objection since this thing came up. Judge Scarritt stands up and talks until the Court rules. Now, my point is this, may it

please Your Honor, that, here is a book that is published. Is it proper for them to take any man, and put him on the stand, whether he wrote the book or not, and let him state what is in the book? Now, that is what they are doing. I object to it as not the best evidence, irrelevant, immaterial and violative of every rule of examination ever known.

Mr. Elliott: When the man is the author of the book?

Mr. Butler: Yes, I don't care if he made the paper that made the book. The book shows what is in it.

The Court: That makes it more objectionable, if he is the author of the book, for the reason of the very argument of Judge Thayer, speaking for the Court of Appeals, be-
2137 cause the witness can be cross-examined. Some courts have held scientific books that have been written by authors now deceased might be used, but here is a witness that is living, in Court, on the stand. If he wrote the book it becomes that much more objectionable.

Mr. Butler: There is no objection to this book going to the jury.

The Court: Very well, then.

Mr. Butler: And then they will know whether Dr. Boss told correctly the cases that were reported.

The Court: Mark that book as an exhibit.

Mr. Scarritt: It has not been offered as an exhibit.

The Court: It has not?

Mr. Scarritt: No.

Mr. Butler: But I do object to this man interpreting what is in it, because the book shows what is in it.

Mr. Scarritt: You are right about that.

The Court: Ask another question, Mr. Elliott.

Mr. Scarritt: Let me make this suggestion, Your Honor: the only reason that this evidence is at all competent is because it is either in contradiction or explanation of Dr. Boos' testimony. If it is, then it is perfectly competent. If it is not this gentleman has no more right to read from this book than I have, or anybody else has; but, if we are correct in our position that it is in explanation of, or in contradiction to Dr. Boos' testimony, when he referred to this identical bok, then it is competent.

The Court: What is the point you make. Do you want that book in or out?

Mr. Scarritt: No, sir.

The Court: Do you want it in or out?

Mr. Scarritt: I don't know anything about that.

Mr. Butler: I want it in view of their criticism of Dr. Boss.

2138 The Court: Do you want it in, Mr. Scarritt?

Mr. Butler: I don't want this man to tell what is in it, because the book tells that.

The Court: Do you want it in, Mr. Elliott?

Mr. Elliott: I had not thought of introducing it. I have no possible objection to it.

The Court: You do not understand my question. Do you want that bok in?

Mr. Elliott: No, I have no desire to have it in.

Mr. Butler: Then, I move to strike out this testimony from beginning to end.

Mr. Scarritt: Strike it out then, and begin over again.

The Court: Very well, stricken out.

Mr. Scarritt: Now ask him without reference to the book. You do not have to have the book .

By Mr. Elliott:

Q. How many cases, doctor, are you familiar with dealing with poisoning that has resulted from the administration of bismuth-sub-nitrite?

Mr. Butler: Just a moment.

The Witness: Poisoning—

Mr. Butler: Did you hear me say wait a moment.

The Witness: Yes.

Mr. Butler: Why, didn't you wait then.

The Witness: I beg pardon.

Mr. Butler: Now, the point is this, when Dr. Boos was upon the stand, in answer to somebody's question, with this book in his hand referred to what was printed in the book as reported cases. Now, they say that he has not told it right. Now, the book is the best evidence, and as soon as we get a chance we will offer it in evidence. That does not make the inquiry as to whether nitrite of bismuth poisoned one, or forty

or a dozen or any, material to this case. There is no claim that it is in flour. It is not addressed to any issue in the
2139 pleadings,—a collateral matter. They may not now enter upon the field of whether or not nitrite poisoning results from administration of sub-nitrite of bismuth, and try that, as an independent issue, and call witnesses upon that point.

The Court: I will hear you, Mr. Elliott, as to why it is competent.

Mr. Elliott: If Your Honor please, all I have got to say is simply this. I am bringing this out by way of explanation. If Dr. Boos did make a mistake, I am sure that he did it unintentionally. I do not mean for a minute to imply that Dr. Boos would have come up here and made a mis-statement, not for a minute, but I understood his testimony to be that there were twelve recorded cases.

Mr. Butler: Recorded in the book?

Mr. Elliott: Reported in that; and that amounts,—those cases, I don't know whether he said all of them, but certainly most of them I believe he said were deaths of infants due to nitrite poisoning by the administration of four and [give] grain doses of bismuth-sub-nitrite. Now, that is what I understood Dr. Boss' testimony to be.

The Court: All right. That gets down to the question assuming that Dr. Boos so said.

Mr. Elliott: On that theory I think it is admissable.

The Court: Yes, that is just the point. Put the book in.

Mr. Butler: Yes, I want it to go in and offer it independently.

The Court: Objection to this question is sustained.

Mr. Butler: No objection to the book or any proof as to what is reported in the book, if it is an original investigation.

The Court: I sustained this objection.

By Mr. Elliott:

Q. Do you Dr. Beck,[—]of recorded cases of instances of accidental poisoning by nitrites? A. Yes.

Q. Will you please tell what they were, and what amount of nitrite was. A. You mean fatal cases?

2140 Q. Yes.

Mr. Butler: I will object to that as irrelevant and immaterial,—

Mr. Elliott: No, not fatal cases, merely. I just said accidental poisoning.

Mr. Butler: Wait a moment. Unless it be made to appear that they are nitrites of the kind claimed to be in bleached flour, and that the details of accidental poisoning cases do not make any difference,—

The Court. I cannot see any difference whether it is accidental, suicidal or homicidal.

Mr. Butler: I cannot see it. If they want the witness' opinion as to what would be fatal, I have no objection to that.

Mr. Scarritt: Now, he went into—

The Court: I am sustaining you, Judge Scarritt.

Mr. Scarritt: But, what I am trying to get at is,—

The Court: I will hear you although I am with you.

Mr. Butler: Now, is this, Mr. Elliott, another way of getting in what is in here?

Mr. Elliott: No.

The Court: Go on, Judge Scarritt. I will hear you, although I am ruling with you.

Mr. Scarritt: I do not want to be heard if you are ruling with me.

The Court: Go on and answer.

A. The cases recorded are from the Pennsylvania Hospital, the Pennsylvania University where 60 to 120 grammes of subnitrate of bismuth had been given by Dr. Pencoast, and—

Mr. Butler: (Interrupting) Wait a moment.

The Court: Is Dr. Pencost still living?

Mr. Butler: Is that matter reported in this pamphlet?

The Witness: It is referred to in that.

Mr. Butler: It is one of the cases in this pamphlet Dr. Boos referred to?

2141 The Witness: Yes.

The Court: Objection sustained.

Mr. Elliott: The amounts are not given in there.

Mr. Butler: Dr. Boos did not give any amounts.

Mr. Elliott: Yes, he did.

Mr. Butler: The book shows.

Mr. Scarritt: Now, your Honor, he offers that book himself. We are offering the witness—

Mr. Butler: It is not received.

The Court: He says he is going to offer it if he gets a chance. Do you gentlemen want this book in.

Mr. Scarritt: I don't know whether I do or not. I have not read it.

The Court: When do you think you will be ready to answer that?

Mr. Scarritt: What is that?

The Court: When do you think you will be ready to answer that plain question as to whether you want that book in evidence or not.

Mr. Scarritt: It is not a plain question.

The Court: Yes, it is a very plain question.

Mr. Scarritt: I agree with your Honor that I do not think the book is evidence. I do not think it ought to be offered in evidence. I do not think the witness ought to read from it. I said, your Honor, when I got up here, I did not think it was competent evidence.

The Court: Well, I will hear you.

Mr. Scarritt: Now, the witness can state, the witness can state of his own knowledge what cases had been, in answer to Dr. Boos who testified.

The Court: Well, read that.

Mr. Scarritt: That he had knowledge of only one case in all his practice.

The Court: What are you reading from.

Mr. Scarritt: I am reading from my notes of his direct examination. He had knowledge of only case of this
2142 kind of poisoning, and that he had read in this particular book of twelve cases, but none of those were cases where the party was sick or suffering or poisoned by bread, but, with some—

The Court: Sit down Mr. Elliott, I am going to hear Judge Scarritt.

Mr. Scarritt: I am through.

The Court: I want you to be through, but I do not want to interrupt you until you are through.

Mr. Scarritt: What I mean to suggest is this. You got mixed up here on the question of admissibility of testimony, and I agree thoroughly with your honor in reference to the disqualification of this book, but that does not prevent us from examining this witness as to other kinds of poisoning of nitrites, nitrates, or all of those substances that Mr. Butler has stood here forthree weeks and examined and cross-examined these witnesses about, without saying a word about the bleached flour, and the nitrites that are in this particular flour. Now, he spent an hour and ten minutes without interruption on the last witness, examining him about every kind of poison on earth, and now we are asking about one particular poison which has been adverted to by their own witnesses, and he gets up here and objects to that, and we want to show that, how it could be, and how many cases there could be, and what kind of stuff it was so the jury will understand.

The Court: Now, wait until Judge Scarritt gets through, because I intend this shall be the last argument made on admissibility of evidence until I invite it.

Mr. Scarritt: That is the first argument I have made. I have objected but I have not made any argument.

The Court: I don't agree with you on that. Now, wait until he is through. Let us have this out. They are in consultation now as to whether this book goes in or not.

Mr. Butler: Here is the testimony of Dr. Boos.

The Court: Is this a transcript?

2143 Mr. Butler: Yes. Whether it was referred to in direct examination, I cannot remember.

Mr. Scarritt: If you will look, Mr. Butler, you will find it in the direct examination.

The Court: Here it is, haec verba from the reporter.

Mr. Scarritt: In the direct examination?

The Court: I do not know.

Mr. Butler: This is in the cross-examination by Mr. Elliott.

Mr. Scarritt: Just because this gentleman has written a book, it does not disqualify him as a witness, and if he knows even what is in the book, of his own knowledge he can testify to it. It is an elementary principle of evidence that a man can testify to what he knows if it is germane to the issues of the case, and the reason it is germane to the issues of the case is because it has been allowed to the witnesses on the other side.

Mr. Butler: Now, I would like not to argue, but to state merely my position. Dr. Boos went on the stand. Dr. Boos referred to this book, which he offered to counsel at the time, —had it in his hand at the time,—and said certain cases were reported in it. Now, if they are not reported in the book, the book is admissible evidence on that subject. There isn't any doubt about that at all, and if it is claimed he did not testify correctly as to what is, in substance, given in the book—

Mr. Scarritt: No claim of that kind made.

Mr. Butler: (Continuing) I haven't any objection to it being given. So much for that. Now, the court has already ruled, now since this witness went upon the stand, that the original inquiry, as to the effect of sub-nitrate of bismuth was not material, as I understood the legal effect of your Honor's rulings.

Mr. Scarritt: Is that correct.

2144 Mr. Butler: Now, if that is correct,—

Mr. Scarritt: (Interrupting) I would like to know if that is correct.

The Court: Now, Mr. Scarritt, I am going to have you keep quiet until Mr. Butler gets through, then I will hear you again and we will have this out.

Mr. Butler: Now, if that is correct, that is the end of the chapter,. and this sub-nitrate case reported there would not be admissible in evidence, if we had a good witness here who knew the facts. Now, this question is not what he has seen done, but what somebody has reported, as I caught the substance of his answer, as having occurred at Philadelphia in the Pennsylvania Hospital. Now, if it be admissible at all, we must have evidence of it, and not rumors. This case has been characterized on the part of the defense from the time they commenced up to the present moment by the calling of witnesses who confessedly did not know touching the matters that they were interrogated about. If they would bring a miller from the mill with a pipe, they would bring somebody who did not know whether it was cleaned out, or how long it had

been used. They bring men who live in offices across the street to testify that there was no odor in the mill, and now, as I understand the question, and the point of the objection is this: That this testimony is hearsay and on an immaterial point altogether. Now, that is all I want to say about it. I do not understand that the rule prohibiting hearsay testimony is relaxed, because a man has happened to take a degree at college and comes into Court and says, "I heard that there happened in Bellevue Hospital in New York or abroad or some place else," or it was published in a newspaper or the "Modern Miller" or a scientific journal so and so, because we cannot cross-examine these journals. We cannot cross-examine hearsay. We want to do business with men who have the means of knowledge, and who pretend to know, and from the
2145 beginning to the end this defense has been characterized by the production of men who did not know, just as the last witness who did not know where the flour came from which he proved was so digestible. The reverse order is used, and the time has come when they ought to be required to bring proof instead of rumor. Nobody will ever say that the flour of the last witness, to use it as an illustration, was the same kind, except as to bleaching. Nobody will ever say it. But here comes in a whole shoal of it. Not only the circumstances, but conclusions derived from hearsay circumstances, and here comes a man now who is asked to testify what was in his own book, and they decline to tell the Court whether or not they want the book to go to the jury, and now they want him to testify touching the subject [or] sub-nitrate poisoning, when he does not pretend to have seen the patient, but he hears some rumors as I understand it, from the State of Pennsylvania about what happened—

Mr. Scarritt: As I understand you you offered the book in evidence.

Mr. Butler: I say I am willing, if it is claimed that it shall go in.

Mr. Scarritt: Let it go in.

The Court: All right.

Mr. Butler: If it is claimed Boos misrepresented that book I am willing to let it go in, let the jury read it and see.

Mr. Scarritt: Let it go in. Let the whole book go in.

The Court: All right.

Mr. Scarritt: That is all with this witness.

The Court: I just wanted to say this, according to the transcript furnished by the stenographer I assume,—the folios I

hold in my hand shows that what Dr. Boos said on the subject —without stating what he said,—was in the cross-examination by Mr. Elliott.

Mr. Scarritt: You will find it in the direct too.

The Court: Well, I don't know. I find it here in the cross-examination.

2146 Mr. Scarritt: Well, that is so but it is also in the direct.

The Court: In this paper I have. I assume it came from the stenographer. It is a manifold copy.

Mr. Scarritt: They haven't, probably, all of the direct there, have they?

The Court: Yes, the direct is here, and the cross-examination is here. The direct is here by Mr. Butler.

Mr. Scarritt: In order to get my notes right I would like to examine it.

The Court: Now, here is the paper. It is the cross-examination by Mr. Elliott. There is no use wrangling about that.

Mr. Scarritt: By Mr. Elliott.

The Court: Yes, sir, by Mr. Elliott. Here it is right here. Now, I will be very much obliged to counsel from this time on, and I am not criticizing what has been done,—if you do not have arguments as to the admissibility of evidence unless I invite it; otherwise we will not be through with this case this summer. As I understand you are through with this witness, Mr. Elliott.

Mr. Elliott: I want to ask him one or two questions.

Q. To what extent, doctor, have you administered bismuth-sub-nitrate.

Mr. Butler: That is objected to as irrelevant.

The Court: Objection sustained.

Mr. Scarritt: We except.

Mr. Elliott: I will have to withdraw the witness then.

Mr. Helm: I understand this book is in evidence. It has not been marked.

The Court: That book goes in evidence as exhibit 270 by stipulation of counsel on both sides. Whose exhibit is it?

Mr. Elliott: Claimants exhibit.

Witness excused.

2147 Julius T. Willard, called as a witness [of] behalf of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Q. You may state your name?

A. Julius T. Willard.

Q. Where do you reside?

A. Manhattan, Kansas.

Q. Professor, give us your education and qualifications.

A. I was graduated from the Agricultural College of Kansas at Manhattan, Kansas. I studied at the John Hopkins University.

Q. What is your present position?

A. I am professor of Chemistry in the Kansas State Agricultural College.

Q. How long have you held that position?

A. With that particular title I think eight years.

Q. Have you any connection with any of the state institutions?

A. Under the food and drugs law I have had charge of food analysis for the Board of Health.

Q. Of the State of Kansas? A. Ys, sir.

Q. What has been your principal line of work?

A. The teaching of general chemistry, and especially with relation to agriculture; and plant and animal nutrition in that connection.

Q. Well, now, have you interested yourself in any way with this question of bleached flour? A. I have.

Q. When, and under what circumstances did you first begin your investigations?

A. When it was first described in the papers.

Q. When was that.

A. That I should judge was about six years ago.

Q. Under what circumstances did you start any investigation?

Mr. Butler: I object to that as immaterial. I have no objection to what he did or what he knows.

The Court: Objection.

Q. How long have you been engaged in investigating this subject.

A. I began about four years ago last March and at that time a number of samples of flour were sent me by the
2148 secretary of the Kansas State Board of Health, with the request to state whether they had been artificially bleach-

ed or not, and I, in considering the matter thought of this Griess test for nitrites as possibly available, and was the first one to use that test, so far as I know.

Q. I will ask you upon what re-action the Griess test for nitrites and nitrous acid depends?

A. There is, first the formation of the diazo compound, which then forms a dye, with an animo compound, naphthylamine. The Dyaso compound is formed with the sulphonylic acid, and then that reacts with the naphthylamine to form a dye of very high coloring power.

Q. Now, is that action of nitrous acid, under these circumstances the general one that occurs?

A. It occurs quite frequently, especially at low temperatures, but probably quite as frequently a different reaction takes place. Instead of the diazo compound, free nirtogen is produced by the inter-action of the nitrous acid, and the amino compound.

Q. Do amino compounds occur in the animal body?

A. They do.

Q. Give us an example of one of those compounds.

A. Urea is a prominent example.

Q. How does urea act with nitrous acid.

A. The two interact with the production of free nitrogen, and carbon dioxide and water.

Q. Is that a well known reaction in chemistry?

A. Yes, sir. This general reaction is taught in all elementary chemistry.

Q. Have you yourself used bleached flour, Professor Willard? A. I have.

Q. I will ask you, in your use of this flour, and particularly as to bread made from it, let me ask you, first, do you mean by using it, that you have used it in your family?

A. I have.

Q. Have you ever noticed in bread,made from bleached flour, any difference in odor or taste from what is present in bread made from unbleached flour?

A. I have never noticed any such distinctive odor or taste.

2149 Mr. Butler: That was not the question.

The Witness: I beg your pardon.

Q. The question was have you ever noticed any difference.

A. I have never compared them directly from the same flour.

Q. Well, have you ever noticed any unpleasant odor, or unpleasant taste in bread made from bleached flour?

A. I have not.

Q. Have you made any scientific test of bleached flour in your department of the agricultural college. A. I have.

Q. And what has been the nature of those tests or investigations?

A. The comparison of the relative rate of digestion of bleached flour and unbleached flour, also baking tests.

Q. Now, what has been the character of the tests you have made as to digestibility?

A. I have tried them with pepsin, pancreatin, diastase and saliva. One with saliva.

Q. When you say you have tried "them" what do you mean, —the bread or the flour or certain constituents of the flour, or all of them. How is that?

A. The experiments were made with flour, The intention was to have them as strictly parallel as possible.

Mr. Butler: I move to strike out the intention as immaterial. I have no objection to what was done.

The Court: Motion sustained.

By Mr. Elliott:

Q. Your digestion experiments were carried out with the flour itself. A. Cooked flour.

Q. Cooked flour. A. Yes, sir.

Q. Not with the bread. A. Not with the bread.

Q. Did you make any separate determinations as to starch and gluten digestion.

A. The action, or experiments with disastase and saliva, had reference to the change of starch while the experiments with pepsin and pancreatin had reference to the change of the nitrogenous constituents of the flour.

Q. Now, have you made any baking tests? A. I have.

Q. What was the nature of those tests?

A. They were made from the same flours, in part, the third series. Then I had baking tests upon other flours
2150 also.

Q. Now, what were the baking tests made to ascertain? What was the purpose of them and what was the result of them.

A. To ascertain whether or not there was an observable difference in the baking qualities of the bleached and unbleached flours.

Q. What did you conclude as the result of your experiment?

A. That there was no difference.

Q. Now, how many digestion experiments did you conduct, Professor Willard.

A. There were about ninety-four comparisons.

Q. Could you give us a typical experiment with each one of those substances, with each digestive fluid I mean?

A. Yes, I can.
Q. Give us such a one.
A. Here is one with pepsin digestion in which ten milligrams of the pepsin was used, and there were five hundred cubic centimeters of the liquid bread. The flour contained 2.25 per cent of nitrogen.
Q. 2.25%
Q. Could you give us that in terms conveniently? Well we will figure that out. Go ahead.
A. In the digestive material—.
Q. Was the unbleached flour tested for nitrites?
A. It was.
Q. And were there any nitrites in it. A. No.

Mr. Butler: Do you mean that there was 2.25% of nitrites?

A. No, there was 2.25 parts of nitrogen in the flour, represented the composition of the flour.

By Mr. Elliott:
Q. Now, let me ask you this. Did you make a quantitative determination of the nitrite reacting material in the bleached flour?
A. Yes, sir, in this case. Not in all cases.
Q. In this case what was it?
A. There was none—well, you asked for the bleached. There was none in the unbleached. We had flours bleached to two different degrees. In one there was .6 of a part of nitrous anhydrid per million. In the other 1.1 part of nitrous anhydrid per million.

Mr. Butler: What would that be calculated as ni-
2151 trogen?
A. I would have to make a calculation.

Mr. Butler: What is the formula of nitrous anhydrid?
A. N203.

Mr. Butler: That is nitrogen tryoxide? A. Yes, sir. If I have made no mistake, the one would have .22 parts of nitrites nitrogen per million, and the other .4 part nitrite nitrogen per million.

By Mr. Elliott:
Q. That is the flour.
A. That is the bleached flour. Now, after these were submitted to the peptic digestion—

Mr. Butler: Are you going to give your conclusions now?

The Witness: I was going to give these figures.

Mr. Bueler: I will object to any conclusions, as there is no conclusion laid as to the flour.

By Mr. Elliott:

Q. What was this flour you had, Professor?

A. This flour was obtained from the mill in Manhattan. The unbleached sample was taken from the stream—

Mr. Butler: (interrupting) Wait a moment. Did you do it?

A. I did not do it personally.

Mr. Butler: Did you see it done?

A. I did not.

By Mr. Elliott:

Q. Who did do it.

A. Now, this sample I started to speak of, the miller did. These experiments were done without reference to this case, of course.

Q. We understand that.

A. Co-operation with the mill company.

Q. Where did you get the flour and how did you get it.

Mr. Butler: I shall object to his characterization of any of it as bleached and unbleached. Now, your Honor will notice that the amount of nitrite nitrogen in this flour which he says was bleached, was .22 which is one fourth of one
2152 part, and they have told us that the unbleached flour contains about twenty times as much. Now, it has been testified here that there is no way known to tell what flour is bleached, and what flour is unbleached. Now, I must object to witnesses coming on here who have no knowledge of the flour and saying that it is bleached, and that it is unbleached.

The Court: It is hard to so marshall the evidence, as to put it all in its regular order. I assume you are going to show the integrity of this sample, Mr. Elliott, are you?

Mr. Elliott: I hope the witness can tell us.

Q. Where did you get the flour, and how did you get it, and how do you know it was bleached.

The Court: Was it bleached in the laboratory.

The Witness: No. We had three separate samples. My assistant was present when the samples were taken, and saw them. This one that I started to read the figures on was a later one though, and he was not present.

Q. You have one which your assistant saw taken?

A. Yes, sir.

Q. And your assistant is here? A. Yes, sir.
Q. And he knows them, does he, to be bleached and unbleached from the same flour? A. Yes, sir.
Q. Now, deal with that flour then.

Mr. Butler: We will leave this where it is, then, and start out new?

Mr. Elliott: Yes.

The Court: This is one his assistant saw taken from the mill?

The Witness: Yes, sir. It was taken in October 1908.

Mr. Butler: What mill?

A. The Manhattan Milling Company, Manhattan, Kansas. This flour contained 1.84 per cent of nitrogen. I have to give this figure in order to show the extent to which the dif-
2153 ferent samples were digested.

Mr. Butler: Both samples tested the same of nitrogen?

The witness: Within the limits of experimental error. Well, they were the same, really. One was 1.84 and 1.83, in each case the flour bleached and unbleached.

Mr. Butler: New and old flour.

The Witness: It was in October.

The Court: New or old flour.

The Witness: Taken directly from the mill, and from the wheat of that season.

By the Court:
Q. Wheat grown that season? A. Yes.

By Mr. Butler:
Q. New flour, made from new wheat, in October?
A. That was represented so, to us. Now, after digestion with two and one-half milligrams of pepsin, in five hundred cubic centimeters, an amount was rendered soluble that was equal to .716, practically .72 of one per cent of the nitrogen of the flour. That is the total nitrogen, representing the 1.82 per cent of the flour, and this digested portion of .72 per cent of the flour, in the case of unbleached flour. In the case of the bleached flour, the results were .71 of one per cent. These results were well within experimental error.

By Mr. Butler:
Q. Do you mean .716 of one per cent?
A. That is the way the figures came out, practically seventy-two.

By Mr. Butler:
Q. That is what was rendered soluble?
A. In one of the duplicates on the unbleached.

By Mr. Butler:
Q. Well, now, so we won't make any mistake, you started out with 1.84 of nitrogen in the whole flour. That was the nitrogen content of the flour?
A. Calculated on the flour.

2154 By Mr. Butler:
Q. Called them both alike? A. Yes.

By Mr. Butler:
Q. Now, you have not told us, yet, how much nitrite was in either. A. I do not know.

By Mr. Butler:
Q. You do not know how much? A. No.

By Mr. Elliott:
Q. You did not make the nitrite determinations?
A. I did not make the nitrite determinations on these samples.

By Mr. Butler:
Q. Well, you say in this peptic solution, there was digested .72 of one per cent of the flour? A. Of nitrogen.

By Mr. Butler:
Q. Well, you said of the flour.
A. The nitrogen in the digestion portion was .72 of one per cent of the flour.

By Mr. Butler:
Q. And the nitrogen was .72 of the flour, or .72 of one per cent of the flour, that was digested, and did not digest?
A. That was digested. The amount digested had .72 of one per cent. Now, with the bleached flour, the amount in the digested portion, the nitrogen in the digested portion was .71 of one per cent of the flour. That is, the results were within the limits of experimental error, in the determinations of nitrogen.

By Mr. Elliott:
Q. And there was no difference, then, between the digestibility of the bleached and unbleached flours?
A. No difference in the rate.
Q. In the rate of digestion? A. No.
Q. Now, that was with what? A. That was with pepsin.
Q. Now, give us one with pancreatin, if that is the next one. I do not care which substance you use.

2155 A. With one milligram of pancreatin, there was, of unbleached, .41 of one per cent of nitrogen, calculated upon the flour in the digested portion, and, in the bleached flour, there was .42 of one per cent of the nitrogen calculated on the flour in the digested portion, the results being within the experimental error on the determination of nitrogen.

Q. That is, no difference in digestion?

A. No difference.

Q. Now, with the other digestion fluids.

By Mr. Butler:

Q. On the same samples?

A. On the same samples, yes, sir.

By Mr. Butler:

Q. Well, you say the same samples. This was the same mill?

A. Yes. These same two flours. The method of procedure there was to submit that to the action of diastase and, in the first one that I have here, there was .2 of a gramme of diastase, and .1 of a gramme of the flour, with one hundred cubic centimeters of the solution. Now, the method in this case is to test, from time to time that liquid, for starch, and observe at what time the reaction with iodine disappears. Now, this is a point which cannot be determined with absolute exactness, by many other tests, and it was not possible to notice any difference in the strength of the reaction, or in the time when the reaction for starch, or any action at all with iodine, disappeared in the two samples.

By Mr. Elliott:

Q. So, what did you conclude as the result of that experiment? A. I concluded that there was no difference.

Q. In the rate of digestion of the starch?

A. Yes. The action of diastase upon starch, strictly speaking.

Q. Now, what is the other—the saliva?

A. The saliva was not tried on this particular sample.

Q. Now, have you made other digestion experiments on flour, that was bleached and unbleached?

A. None that you can trace in this way.

Q. Well, I just want to get at what you have actually
2156 done. I am not going to ask you about the experiments. Just tell me what was the nature of these experiments? How did you get the flour? Was it flour sent you in your official position, to test, or how did it come to you?

A. I sent my assistant to the mill to get it.

Q. And you have made more than one test on this particular flour, that your assistant got for you? A. Yes.

Q. More than one test has been made on that, by these digestion experiments? A. Yes.

Q. Now, you spoke of having made a great many digestion experiments—was it ninety-four?

A. More or less. That is the number that I made, in counting over.

Q. Upon what flour were they made?

A. They were made, part of them on this, and the others upon two other samples obtained at the same mill.

Q. Obtained at the same mill, by your assistant?

A. I know that the last one was not obtained by him. I have forgotten about the second.

Q. Now, as a result of your experiments as to digestibility, I will ask you if, in your opinion, bleached flour is injured in its digestibility, either as to the digestibility of its gluten or starch. A. In my opinion it is not.

Q. What is the gentleman's name that you said is your assistant? A. Mr. Utt.

Q. And you say he is present? A. He was. He is.

Cross-Examination

By Mr. Butler:

Q. I only want to interrogate you touching the very matters brought out by Mr. Elliott in the direct examination, and, as I understand it, you gave us the results of experiments on only flour. A. Yes, sir.

Q. And that was in October, 1908?

A. That is when the flour was milled, yes.

Q. 1908? A. Yes, sir.

Q. And with respect to that flour, you never did find
2157 out, by hearsay or any other way, how much nitrite reacting material there was in it? A. No, sir.

Q. You did find out by hearsay, that one was bleached and one was not, because your assistant went down and got one before it went through, and the other after it went through?

A. Yes, sir.

Q. That was at the Manhattan mill? A. Yes, sir.

Q. Is it within your knowledge that that mill bleaches very lightly, and that its fresh bleached flour only gives about .15 of one part per million nitrous nitrogen?

A. The only figures that I have in mind are those that were objected to.

Q. Well, you do not know, then, of your own knowledge, whether they bleach heavily or lightly?

A. That flour was sent up from the mill.

Q. And you were told it was bleached, but you do not know how much stuff was added to it by the bleaching?

A. I should call it lightly.

Q. Very lightly, wasn't it? A. Rather lightly.
Q. Did you test it for bleaching, independently?
A. I cannot say about this flour I am testifying of.
Q. I am speaking only of this one particular sample. Did you drop some of the Griess reagent on this?
A. I did not myself, I am sure.
Q. There is no record made of how much it did contain, that you know of? A. I do not remember that determination.
Q. You know that it was not quantitatively determined by anybody? A. I know that I did not.
Q. You know that you did not do it? A. Yes.
Q. Do I understand you are the first one who ever used this Griess test? A. As far as I know.
Q. When was that? A. In March, 1908.
Q. The Griess test was not known, for the purpose of testing bleached flour, before that?
A. Not to my knowledge. I published it at that time.
Q. Of course, the test, itself, for nitrites, was known?
A. Oh, certainly. I had used it many years before.
2158 Q. So, until March, 1906, it was not known, and not employed so far as you ever heard of, for finding out whether flour contained nitrites, or nitrous acid, or nitrite reacting material? A. So far as I know it never had been used.
Q. It is the only test known for nitrites at all, isn't it?
A. There are other tests that are used.
Q. I know, but this is practically the only one that is used?
A. On flour, I think so.
Q. On anything, wherever you want to find a nitrite, you get your Griess test, don't you?
A. That is the most delicate test.
Q. And the best one, most commonly used, isn't it?
A. For minute quantities. Of course, in larger amounts, other tests are used.
Y. Will it discloses the nitroso compounds in flour?
A. I should expect it to.
Q. The nitro bodies?
A. Not unless some further change took place.
Q. The xanthoproteic reaction? A. I do not know.
Q. The amido compounds?
A. Will the Griess test show that, you mean?
Q. Yes. A. Not to my knowledge.
Q. Amyl nitrite? A. I should expect it to.
Q. Will it identify it, from any other nitrite?
A. I should think not.
Q. It will simply identify nitrites? Isn't that all?
A. Yes.

Q. Whether nitroso compounds, or what particular nitrites they are it does not disclose, does it, directly? A. No, sir.

Q. All it discloses is that group? A. Yes.

Q. And, so far as the Griess test is concerned, you can have any number of nitrites in that group? Isn't that it?

A. Yes.

Q. Does it disclose whether flour has been bleached or not?

A. I think it does, practically.

Q. With practical certainty, don't you? A. I think so.

Q. How? By dropping a drop on it?

A. That can be used, although I have been in the habit
2159 of shaking it up with water.

Q. Well, that is for quantitative, or qualitative?

A. Either one.

Q. Well, as a practical matter, it is true, isn't it, that, if you slick down a sample of flour, and drop some of this reagent on it, if it is bleached it will show a reaction, very marked degree, and if it is not bleached, it will either show none, or a very slight one? A. Yes, sir.

Q. That is true?

A. So far as my observation has gone.

Q. And your observation has been very much? You commenced studying this thing very early, didn't you?

A. I have not examined so very many samples, although I began early.

Q. And it is a matter of common knowledge, isn't it, among bakers, millers and chemists, so far as you know, this whole country over, that a good, practical way to ascertain whether flour is bleached with nitrogen peroxide gas is, to just slick it down, and drop a drop of the Griess reagent on it, and if it turns a good, fair color, it is, and you would know that it was bleached? A. If the atmosphere is pure.

Q. I mean, under ordinary circumstances, clean and wholesome surroundings. That is it, isn't it? A. Yes.

Q. And that would be so, even in this sample that you spoke of, that only had about one-fifth—between one-fifth and one quarter of nitrous nitrogen to a million? That would show a pretty good test, wouldn't it? A. Yes.

Q. Stronger than any of the other unbleached flours that you have ever observed?

A. I have never observed the test in an unbleached flour.

Q. In all your observations, you never got the reaction in an unbleached flour, did you? A. Never have.

Q. You have never heard of any four parts per million getting in, in two or three days, have you?

A. I cannot say whether I have read that or not.

Q. You have never observed anything of that kind?

A. I have not.

2160 By a Juror:

Q. Why does your State Board of Health require bleached flour to be branded as bleached flour?

A. I think, sir, that it is because they feel the public should be informed; that there are some who prefer unbleached flour, and that they ought to have the privilege of choice.

By Mr. Butler:

Q. You made these digestion experiments to which Mr. Elliott adverted in his direct examination, for the purpose of ascertaining the effect upon flour of bleaching?

A. That was the purpose.

Q. And you came to the conclusion, from the experiments that you did make, that digestibility in these tubes was not affected? A. Strictly, it would be the rate of digestion.

Q. You did not bring any to complete digestion? A. No.

Q. Now, let me ask you this, Professor. I do not know a thing about it, and haven't an impression. I have noticed, however, in many of these experiments for digestion, that have been reported at this trial, that they stop, after they have digested a half or one-third of the substance. Now, might it not well be true that some of the residue of the substance would not digest at all, or digest more slowly, in one specimen, than in the other. In other words, what I mean is this: we will take two masses, and illustrate them in like quantities of bleached and unbleached flour, or any other substance. I am trying to get at a general truth, here, and you test them, and, down to about the middle, we will say, they both go down alike.

A. Digest, you mean?

Q. Yes, they both digest the same. Now, what I am trying to get at is this: If you continue that on down, might you not find in the residue of this one, something that would not digest at all, or slower than in this? A. I think not.

Q. You think that, stopping half the way down, you would have a fair test? A. Yes, I do.

Q. Now, is it not customary, and indeed very desirable to use very much larger quantities of the fluid than you
2161 used, we will say, in the pepsin experiment? Shouldn't there be one hundred times as much used?

A. Of the material?

Q. Of the pepsin.

A. That would be a matter of opinion.

Q. Well, would this simply be a hydrochloric digestion you got there? A. No, sir.

Q. How much pepsin did you use?

A. I have forgotten which one I read. Two and one half milligrams.

Q. In the whole thing? A. Yes, sir.

Q. Now, here is a milligram here. There are nine milligrams of stuff in that whole thing there, in Exhibit 225. Isn't that an awfully small amount of pepsin to use?

A. Oh, it is, yes, sir. Pepsin is an exceedingly active substance.

Q. You had five hundred cubic centimeters of flour?

A. Of liquid.

Q. Don't you think it would be better to have two hundred times as much as you had in both?

A. That would be altogether too much to handle.

Q. Now, did you find that this flour that was bleached, was naturally aged,—this flour that you digested, one that was bleached, and one that was not bleached. Now, I am trying to find out from you whether the one that was bleached was aged the equivalent of natural aging, or about three months, or such a matter.

A. What do you mean by that?

Q. Don't you know? A. Pardon me.

Q. Don't you know? Don't you know what we mean by the phrase, generally? Of course, you could not know what I meant by it, but I mean, do you know what is meant by the phrase generally?

A. I have talked with millers a great deal about aging.

Q. You have used the phrase, yourself? A. "Aging"?

Q. Natural aging. A. Not in my testimony.

Q. Oh, no, but in your works. I have your bulletin here.

A. Yes.

Q. I was about to call your attention to it, if need be.

A. Yes. Well, by natural aging, I understand a
2162 change that takes place in the flour, in the course of time.

Q. A good change, isn't it, always?

A. Change for the better?

A. It is so regarded.

Q. Does it improve flour, its taste, its gluten, its value, its digestibility? That is the common understanding?

A. I cannot say as to all of that.

Q. Well, but you do know that is the common understanding of the farmers, millers, doctors and lawyers, and of everybody familiar with flour, do you not?

A. I know the general understanding is it improved the color, and the baking qualities.

Q. And the taste? A. I don't know as to that.

Q. Now, do you think that this artificial bleaching by the Alsop process is the equivalent of natural aging?

A. It cannot be the same thing, chemically.

Q. That is utterly impossible, isn't it?

A. That is my judgment.

Q. That is your understanding? A. Yes, sir.

Q. And, away back in 1906, in a bulletin of the Kansas State Board of Health, you were the author of a statement, something to that effect, weren't you?

A. I cannot say from memory.

Q. Well, I wanted to get the connection, because I do not want even to appear to be picking out something out of connection, and I could not read the whole bulletin. You said this: "Whatever may be said in favor of the improvement of flour by this means, it cannot be successfully maintained that the change which takes place is the same as that which takes place by natural aging." That was your opinion then?

A. I still think so.

Q. You said, "Natural aging does not produce the oxides of nitrogen, or the products of their action on the flour."

A. I still think so.

Court thereupon adjourned to ten o'clock a. m. Wednesday, June 29th, 1910.

2163 Morning Session.

Kansas City, Missouri, Wednesday, June 29, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

Julius T. Willard, in continuation of his cross-examination, further testified as follows:

By Mr. Butler:

Q. Bleaching of flour increases the acidity, does it not, slightly.

A. I should expect so. I have made no analyses, sir.

Q. You have so reported, have you not? A. Yes.

Q. It does increase acidity?

A. All reasoning would lead one to say so.

Q. And you so believe? A. So believe.

Q. Well, I understood you to say that you believe that it does? A. I do believe that it does.

Q. And you also believe that the bleaching of flour by these oxides of nitrogen when they come into contact with the moisture in the flour produce nitrous acid and nitric acid in flour? A. At first, certainly.

Q. By my last question I of course meant that the bleaching gas, the oxides of nitrogen, on being brought into contact with the moisture content of the flour at first upon that contact being made the flour is in a state of agitation, the first chemical reaction would be nitrous acid and nitric acid in equal chemical parts, molecular parts? A. Yes, sir.

Q. And of course it is true, is it not, that nitric acid and nitrous however made, when in contact with flour will further act chemically in some form, I don't say in what form?

A. They probably would.

Q. Yes, and nitrous acid acting chemically upon various bases would form nitrites, that would be the chemical

2164 action? A. Acting, if it acted upon bases, yes, sir.

Q. And it would either act or remain free, it would have to do one thing or the other, if it did not act chemically it would remain free? A. It would act on bases, however.

Q. Oh, it might act on something else, I would not know about that? A. Yes, sir.

Q. For instance.

A. It might act on amino-compounds, of course there are some like bases.

Q. I would not understand the chemical difference there, but my understanding goes to about this extent, when a certain acid does act on a base it forms a salt, and that salt is called a nitrate? A. Yes, sir.

Q. And when nitric acid acts chemically on a base it forms nitrates? A. It forms a nitrate.

Q. Yes, and if there are different bases there would be different nitrates? A. Yes, sir.

Q. And under the law of mass action neither one of these acids coming into contact with several bases differing in volume, quantity, each base from the other, and also perhaps in chemical affinity existing between it and the acid in question, there would be formed by the nitrous acid various nitrites, depending upon the character of the bases, the amount of the bases and the strength of chemical affinity?

A. Yes, sir.

Q. And that is that law if mass action would also apply to the nitric acid coming into contact with the various bases would apply? A. Yes, sir.

Q. Chemistry is—ought to be an exact science, is it not?

A. Chemistry ought to be an exact science.

Q. I will just stop there. A. Parts of it are exact.

By the Court:

Q. What?

A. Parts of it are exact, it is among the most exact sciences.

By the Court:

Q. Sir? A. It is among the more exact sciences.

2165 By Mr. Butler:

Q. Well, I don't mean by that that all the chemical knowledge in the world is definitely understood by chemists

or all chemists or by the people, but what I do mean by that is this, that it falls in the group of exact sciences, like mathematics; it is comparable to mathematics, not the same, but like it?

A. The nearer it approaches perfection the nearer it is mathematically exact.

Q. So that chemists may know after they have acquired familiarity with the well established laws of chemistry, what may happen in a given situation, that is, what may happen chemically? A. Yes, sir.

Q. As, for example, a chemist knows just as certainly as it is known that two plus two will make four, what NO2 gas brought into contact with water will produce in molecular parts nitrous acid and nitric acid?

A. I do not think that we can say that we know that in a chemical sense.

Q. Well, I mean when nothing is involved except the water and the gas?

A. It produces an acid mixture which will form nitrites in that proportion, but nitrous acid itself is so little understood—

Q. Nitrous acid itself is so little understood that—I don't care to interrupt?

A. I would not feel like asserting positively just what but it without interference will produce nitrite and nitrate in equal molecular proportions.

Q. Well, that is what I mean. Now, of course some of the ways of getting to the result may be more or less obscure, but the result in nitrites and nitrates are known with certainty?

A. Yes, sir.

Q. Positive certainty, just as through addition of parts of a whole made the whole, isn't that true Professor?

A. Yes, sir.

Q. And, by the way, this is one of the simplest and best understood operations, isn't it?

A. You mean this particular re-action?

Q. No, I mean the treating of a base with an acid like nitric acid? A. Yes, sir.

Q. To produce nitrates? A. Yes, sir.

Q. Perfectly plain, is it not, that if there is affinity between nitric acid and a base, metal, we'll say, like iron, that nitrates of iron will come?

2166 A. Base of iron and nirtic acid.

Q. Yes, a nitrate of some kind?

A. Nitrate would be produced, yes, sir.

Q. And in like manner this substance called nitrous acid, though it has never been isolated, as I understand.

A. I think not.

Q. Will upon combination with the base, form in anything that it will combine with, will form nitrate?

A. Yes, sir.

Q. And there is a great multitude of nitrates known, both organic and inorganic? A. A great many.

Q. A great many, I don't mean in number, and then there are nitroso compounds produced in organic substances by nitrous acid, perhaps?

A. I would not like to answer positively on that—nitroso compounds.

Q. There are nitro compounds produced by the other acid —nitric acid A. Yes, sir.

Q. That is certain, isn't it?

A. To the best of my knowledge.

Q. And then there is also known the yellow re-action called the—on proteids resulting from nitric acid, called the xantho proteic reaction? A. There is.

Q. That is well known, is it not? A. Yes, sir.

Q. And it is certain to take place, is it not, from treating the proteids with nitric acid?

A. I couldn't say as to the conditions essential for the production of that base.

Q. Well, if you pour nitric acid on flour you get the xantho proteic reaction; I don't know whether your attention has been called to this Exhibit 47? A. It has not.

Q. I think that is flour with nitric acid poured on?

A. You can get it under proper conditions unquestionably.

Q. That is what I mean, and all my questions, Professor Willard, involve proper or appropriate conditions with the details and the conditions, I could not—

A. I understood you to ask if it always took place.

Q. Well, I mean always under appropriate conditions, of course, and as to the conditions I would not be able to state them or go into that, because that would involve a very technical—a great deal of technical learning, perhaps. Now,

2167 let us assume that if you pour nitric acid upon flour that the xantho proteic re-action will take place, for example, that would be a reasonable assumption, would it not?

A. If it were concentrated nitric acid.

Q. That is what I mean, just take the nitric acid of commerce and pour it on some flour in a beaker?

A. I should expect to get the reaction.

Q. Now, for example, this would impress you, would it not, this specimen I just show you in Exhibit 46 is a very relatively very large amount of nitric acid? A. Yes, sir.

Q. But you would expect the re-action of the same character, but not of the same degree with a lesser amount of the acid, would you not?

A. I think not, necessarily.
Q. Well, I know—
A. Concentration makes much difference.
Q. Well, I say, but the lesser amount of the same acid would not be the same?
A. I don't think we could reason to that extent, to that point.
Q. Well, in all cases?
A. You could in some cases, possibly.
Q. Well, certainly, couldn't you, a grain of strychnine kills a gopher,—used to poison gophers with strychnine in our country—would it be pretty safe to think that half a grain would make them sick? A. Yes.
Q. And that a quarter of a grain wouldn't be good for his health, do you think that, wouldn't you?
A. We could probably say that.
Q. And, generally speaking, one would argue in that line, would he not, I am now speaking of things relatively gross?
A. Speaking of things relatively gross I think you could say that.
Q. Things may become so minute that we don't know what happens? A. Yes, sir.
Q. For instance, I might take some offensive substance like whiskey in so minute—

Judge Scarritt: You don't call that offensive?

Mr. Butler: To some, very.

Q. In so minute a quantity that no observable effects would be noticed, couldn't I? A. Yes, sir.
2168 Q. Now, of course it is generally known, I understand that a large amount would make one drunk?
A. I have been so informed.
Q. Now, a small amount, a small amount—

The Court: He says he has been so informed.

Q. Would probably have a tendency in the same direction?
A. Is somewhat similar, yes, speaking of relatively gross amounts.
Q. Would have a tendency in that direction?
A. Yes, sir.
Q. And, so, generally speaking, we live our lives, we find a substance like nitric acid, it is a poison by nature to take, we'll say, internally, I think most of men agree to that, wouldn't you?
A. In any concentrated form it certainly would be.
Q. Then if we have enough it would kill, half enough would make you sick, a quarter as much would not be very good for us, isn't that true? A. Yes, sir.

Q. And so on as far as we could reason?
A. I don't think we are able to say that.
Q. No, but you can't say to the contrary because it gets so minute that you cannot observe the effects?

Mr. Elliott: Your Honor, I object to this line of examination; this gentleman is not qualified as a toxicologist.

The Court: Yes, I think that is so, I was thinking about that; this gentlemna does not testify as a toxicologist.

Mr. Butler: No, I really inadvertently got into this subject, Professor Willard, on account of this law of mass action.

The Court: Objection is sustained.

Redirect Examination

By Mr. Elliott:
Q. You spoke something about amino-compounds. Are there amino-compounds in foods, Professor Willard?
A. There are.
Q. What kind of foods?
A. They are found in meat; they are found in what we commonly call vegetables, potatoes, turnips, cabbage, beets, asparagus; they are found in relatively small amounts in grains, that is the seeds; they are found most in the vegetation, what are called the vegetation portions of plants, that is the growing parts.
Q. Now, what is the effect of these compounds on nitrous acid?
A. Nitrous acid and amino-compounds interact, a change taking place in both, in which the nitrogen and the
2169 amino-compound or the amino group of the compound and in the nitrogen of the nitrous acid are given off in a free state, and in that case the amino group of the amino compound is replaced by the hydroxyl group; that is NH2 is replaced by OH.
Q. Can you tell us what else is given off besides free nitrogen? A. Water would be.
Q. Carbonic acid gas?
A. That would depend upon the nature of the amino-compound with urea, as I stated yesterday, carbonic acid gas would be produced, but with the amino-compounds of food you would have a more complex carbon content.
Q. Now, is urea one of these amino-compounds? A. It is.
Q. I want to ask you, Professor, if you made—dealing with that first sample of flour you testifed to yesterday, did you make the determination of nitrogen of the flour of the bleached and unbleached? A. We made that.
Q. Was the nitrogen content the same?
A. It was the same.

Q. Did that to you as a scientist indicate that the flours were of the same quality, so far as the proteids content was concerned, or the nitrogen content, did that indicate that they were the same flours, to your mind?

A. It would be evidence as far as it goes.

Q. And you were dealing in that with the disappearance of nitrogen by digestion, were you not?

A. Not the disappearance, but the making of saliva and nitrogen compounds.

Q. So that, as a matter of fact, you did start with two flours, enough within the limits of air, the same amount of nitrogen? A. With three flours.

Q. With three flours, I should say. I will ask you if you have ever made any experiments in this line of exposing flour to air to ascertain if flour is bleached and acquires any of this nitrite reacting material?

Mr. Butler: I think the experimentation would not be redirect examination.

The Court: Well, he may answer. Go on, please.

A. I have not.

2170 Q. You were asked something about your view, as you understood it, as to whether there was an increase in the acidity of flour. Did I understand you to correctly state that you have made no analyses to determine that point?

A. We have made analyses, but I am not in a position to testify on the figure.

Q. You yourself made no analyses personally?

A. They made them in the department, I haven't that many hands, no, but—

Q. Now, while it is true, as you have stated, that the laws of chemistry are certain, I want to ask you if it is not also true, Professor Willard, that in the realm of chemistry new compounds, new substances, and perhaps new laws, are constantly or at least frequently being discovered and with some degree of frequency old theories are discarded, isn't that true?

Mr. Butler: I object to that as irrelevant, and immaterial.

The Court: He may answer.

A. It is true.

The Court: I want to say this, I have been ruling, it has been an inexact science; if I am not mistaken some of my rulings with reference to these books will be wrong. That is the argument of Judge Thayer in the case of the Union Pacific Railroad against Gates, which was based upon the theory that medicine and the practice thereof was not an exact science; hence it was that the Court of Appeals held that the admission

of Erickson on concussion of the spine was not admissible. Now, scientific books with reference to an exact science would perhaps be admissible. I mention that now for both sides to consider. Works in algebra and calculus, something that the ordinary judge or jury would not know about, would perhaps be admissible,—the solution of a problem in algebra, calculus or geometry. Well, go on.

By Mr. Elliott, resuming:

Q. Now, I have understood you to state in answer to Mr. Butler's question that this xantho proteic re-action produces a yellow compound? A. Yes, sir, yellow color, at least.

2171 Q. A yellow color, I should say, and have you any knowledge as to whether that requires a highly concentrated form of nitrous acid to produce it?

A. My experience has been that it must be fairly concentrated.

Q. Now, suppose some gentleman had testified that he had sprinkled dilute nitric acid on some flour, and he brought it in here and swore that that flour was bleached, that is made whiter. What would you say as to whether or not a xantho proteic re-action had been produced?

Mr. Butler: I object to that as irrelevant and immaterial. I have a great confidence in Professor Willard and would be almost willing to have him serve on the jury, but I would not like to have him pass on the testimony—credibility of witnesses.

The Court: You cannot ask as to whether another witness ir credible or not, and that is the effect of this; you may ask him what the result would be.

Q. Well, assuming that dilute nitric acid if sprayed on flour bleaches it; in your judgment would that—by bleaching I mean makes it whiter—in your judgment what would that indicate to you as to the formation of a xantho proteic re-action? A. It would not indicate anything to me.

Q. Would not indicate anything?

A. That is, I would not know.

By the Court:

Q. You say you would not know?

A. I would not know what the effect would be.

The Court: Well, that disposes of that; he said he don't know.

Mr. Elliott: I believe that is all I have to ask, Mr. Willard.

Recross Examination

By Mr. Butler:

Q. Suppose that the coloring matter natural to flour, the color described as white, but being in fact a creamy yellow, that is the fact, is it not, a creamy white to yellow?

A. I should say so.

Q. Suppose it be the fact that that color in flour be made up of two primary colors of the prism, yellow and
2172 orange; that the yellow is .13, as against the orange .15, and that is the natural color; now, yellow, the primary color, yellow is a stronger color, is it not, that is, it is the most prominent color—

The Court: Stronger than orange, he means.

By Mr. Butler:

Q. Orange as against lemon?

A. That is, of course it depends on the intensity of the tint of yellow.

The Court: He gives those per cents.

A. Oh, I beg pardon.

Q. I mean 13 to 15, call them equal, call them equal in per cents, the yellow would be the stronger, would it not; for instance, there are seven colors, violet, indigo, blue, green, yellow, orange and red.

Mr. Elliott: I object to this as not proper recross-examination.

The Court: He may answer.

To which ruling claimant then and there duly excepted.

Q. That is true, is it not, the orange would be, in your judgment, the stronger?

A. I must beg pardon because I didn't know what you were getting at, and I have to hear the first part of the question again.

Q. Well, let me—I will form another question so as to direct your mind if I can to what I am at. The creamy color observed in natural flour is not in one of the primary colors alone, in one of the seven primary colors that we have used, the primary colors, as the seven colors of the rainbow, but is made up of yellow and orange in the relation of 13 yellow to 15 orange. Now, assume that to be the fact, now, assume further to be the fact that as you—well, first these colors are vegetable colors, are they not.

Same objection by claimant.

The Court: He may answer.

Q. Natural, harmless, vegetable colors?

A. As far as I know they are.

Q. Generally so understood; color in flour, that is what I mean, in the flour, the natural color in flour. Now, then, assume that with certain treatment by these gases the
2173 orange descends to zero, the yellow observable, whether natural or artificial we can't tell, will descend by like treatment to six; further treatment continues, the orange at zero, at zero, at zero, no matter how much you give it, but a little more of the treatment then brought the yellow to six, increases it to eight, and increases it to twelve, to thirteen, and so on, until it becomes a strong yellow, stronger than the yellow that you started with.

The Court: Stronger than 13?

Q. Stronger than 13, but the orange is all zero, would you not say, assuming what I have told you to be the truth, to be the fact, that the bleaching is adding yellow to the flour?

A. I think it would be, assuming that to be true.

Q. Yes, sir, if that were not true the yellow would never increase, would it; I say the yellow would never increase with increased application of the bleaching medium unless the bleaching medium was making it? A. No.

Q. Now, then, let us assume that the natural yellow is an innocent harmless, vegetable yellow. Slight bleaching reduces that a little but never obliterates it. Is that not wholly consistent with—I don't say it is dye proof, but is it not wholly consistent with the theory that the first attempt of bleaching, it is the unnatural yellow, the wicked yellow of the bleaching, and continue to add it as you continue to bleach, destroying totally the original natural yellow, but when that is destroyed you have the six of the wicked yellow of nitric acid?

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial and a mere argumentation not based on any evidence in the case.

The Court: He may answer it.

To which ruling of the court claimant then and there duly excepted.

The Witness: I beg pardon, I hardly know exactly what the question is now.

2174 Judge Scarritt: I don't see how he could.

The Court: It is as plain as A B C to me, but I have been following the question.

Q. Well, what I am getting at, you see what I am getting at here, if you bleach the orange readily descends all the time down to zero? A. I understand.

Q. But your yellow—you started out with an innocent yellow. Now, my theory is that you put in a wicked yellow from the time you start, all the time, you descend a little ways, but you get out all your innocent yellow and continue to put in the wicked yellow which is the evidence of the nitric acid upon the protein right straight along; now, aren't the facts which I have stated to you perfectly consistent with that theory or claim of mine?

Same objection by claimant.

The Court: He may answer.

[Q.] Now, if I remember your statement, I think they are consistent.

Q. You think they are?

A. That is, that the original color might be destroyed?

Q. Yes.

A. And from the very first, coincidentally, a new color substance might be produced; now, if that is the question, I believe it is possible; I don't say it is.

Q. Now, nitric acid, though, we do know, will make yellow, increasing in intensity, in sufficient dilution it will make a yellow and increase in intensity as the acid is increased?

A. I am not able to say; my observations have been with the stronger acids.

Q. Now, the water content, let us take this other example. Here is, we'll call that circle one of the dust particles of flour—do you understand what I mean?

A. One of the finest particles of flour.

Q. One of the fine particles. I make it large there so we can get at it. Now, in the flour there is about ten or fifteen per cent water, isn't there, of the total flour weight, rather?

A. Yes between that—it should not be—

By the Court:

Q. How much do you say twelve, ten, along there?

2175 A. About twelve per cent.

Q. About twenty pounds or twenty-five pounds in a barrel of flour. Now, that water is distributed, is it not, all through that flour, and as a very thin film over the dust particles of the flour?

A. All through the particles.

Q. Yes, and all through them. Now, we are dealing with very minute things, now? A. Yes, sir.

Q. Now, does not the degree of concentration of nitric acid which NO2 will produce in that moisture depend, I wont say

definitely upon what, but in some manner upon the method of distribution of the water content? Do you get my point? The method of distribution of the water, or the manner that the water is found or distributed through the flour?

A. The concentration at first would.

Q. Yes, that is what I mean, and if in very thin film, microscopically so, if that is possible, the concentration would be greater than if it were in a bucket, in a large mass?

Counsel for claimant objected to the question as not being based on any evidence.

Q. The same amount of NO2 being used.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Well, that is—that last statement is not in harmony with what I understood the previous question to be, that is, the attorney spoke of the distribution of the water.

Q. Yes.

A. Now, if the water is distributed through that dust particle, that may be a very small particle but as compared with molecules it is very large, and the water molecules, I would say, are through that particle, they are on the surface and they are through that small particle, and these oxides of nitrogen would first come in contact with the surface, and hence this film on the surface would be a more concentrated solution [that] if it were at once mixed with the total amount of water in the particle, but that is quite different from speaking of the volume of water
2176 and a bucket of water.

Q. Well, I was trying to get at what you said; I was trying to say what you did, but I didn't know how, what you just said, but I didn't know how, that is all. Now, so then concentration and dilution would be a factor in the production of this yellow re-action, no doubt?

A. Certainly.

Q. With length of exposure, length of time?

A. I think so.

Q. So, time and concentration? A. Yes, sir.

Q. Well, now, we'll drop it. Mr. Elliott brought out the fact that the amino compounds are found in flour, did he—my attention was given to something else just then—in many places, including flour? A. Yes.

Q. That is right, isn't it? A. Yes.

Q. Now, there are various groups of these amino compounds, are there not? A. Yes, sir.

Q. There is the primary amino compounds, so called, and the secondary, so-called?

A. Primary amins and secondary amins.

Q. Yes, primary amins and secondary amins. Now, nitric acid acts on the primary amins and forms what is called hydroxy compound, or may do so? A. Yes, sir, it may do so.

Q. And upon the secondary amins, and give the nitroso compounds?

A. I have not reviewed that for some time, and I would not like to swear to it.

Q. You would not be willing to swear that it was or was not so? A. Not today.

Q. Very good. Now, the proteids of flour contain these amino groups; are they the proteids or in the proteids or of them? A. The proteids yield them.

Q. Yes, affects food value?

A. It does affect food values.

Q. Yes, sir, their presence or absence?

A. To an extent, yes, sir.

Q. And nitrous acid being brought into contact with these amino groups, the primary—I confine you to that be-
2177 cause you are not willing, as I understand, today, to talk about the other—the nitrous acid changes, and the constituents of the flour, to-wit, this amin, primary amin group, changes?

A. I would not say that it does of the protein, if that is what you mean by your question.

Q. Well.

A. I stated that the protein substances would yield amino compounds and keep on yielding, but that they actually contained the amino group previous to splitting up I would not be able to say.

Q. Oh, I see. Then, as I get your meaning, the amino group may not exist until the proteids split up and produce them?

A. The flour would contain amino substances that are not proteids.

Q. I see. Now, what I am getting at, whatever it is, the nitrous acid comes there, going to be a change, the acid is changed and the flour constituent is changed? A. Yes, sir.

Q. Now, so as not to confuse ourselves with hard names, then the situation is this, there is in the flour and in the grain certain substances of value called amins, nitrous acid will affect it, and it will affect nitrous acid?

A. I would say amino compounds. I would not say amin.

Q. All right, amino compounds. I don't know the difference. A. Amino compounds or amido compounds.

Q. And the nitrous acid will break them up and make something else out of them? A. They interact, yes, sir.

Q. Something else is the result when the nitrous acid comes in? A. Yes, sir.

Q. Is that same true with nitric acid?

A. It does not have the same effect.

Q. No, but is there a similar effect, a breaking up of some part of the flour by nitric acid, or do you know about that?

A. Not with these amino groups.

Q. It would not be with the protein if in concentration, that we have been talking about? A. Yes.

Q. So it follows, does it not, as night follows the day, that nitrous acid is not normal to bleached flour, is it?

A. I have made no investigation of that excepting that I have not detected—

2178 Q. Never heard that it was?

A. I have not detected it in flour.

Q. So then the truth is the application of nitrous acid to flour changes the flour and the flour changes the nitrous acid?

A. Yes, sir.

Q. Changes the substances of it? A. Yes, sir.

Q. Changes the nature of the substance of it?

A. To an extent.

Q. And neither betters it or injures it as food?

A. Yes, sir.

Q. Now, which do you think it is?

A. It might better it in one respect, and injure it in another?

Q. Yes, sir, so that the result of all this, this NO2 getting into contact with the water and producing the acids, and the acids work upon the flour, and they change the flour, that is the truth about the matter, isn't it, and they change the flour?

A. They change the flour.

Q. That is the truth about it, the degree of change will depend upon the quantity used? A. Probably.

C. A. A. Utt, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

By the Court:

Q. Where do you live? A. Manhattan.

Mr. Butler: I waive the supplying of the proof with respect to the samples that Professor Willard digested.

The Court: Then that is all.

Mr. Elliott: There was some other flour.

Mr. Butler: Then I withdraw my waiver, if we have to examine him.

Judge Scarritt: Let the waiver stand as to that, and save time.

2179 Mr. Butler: No, if we are going to examine him, we will have it all out.

By Mr. Elliott:

Q. What flours did you produce for Professor Willard, did you procure, and where?

A. In October, 1908, I secured a sample from the Manhattan Milling Company, and in March of this year, 1910, I arranged for getting another sample.

Q. Now, what do you mean by "arrange for getting another sample"?

A. I went down to see the miller regarding it, the Manhattan Milling Company, and the miller being absent at the time I arranged to have it sent up.

Q. And was it sent up? A. It was sent up.

Mr. Butler: That is objected to as irrelevant.

The Court: Well, it may stand.

Cross-examination declined.

Robert R. Clark, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Judge Scarritt:

Q. Your name is Robert R. Clark? A. Yes, sir.

Q. You live in St. Joseph, Missouri? A. Yes, sir.

Q. Manager of the Davis Milling Company of that place?

A. Yes, sir.

Q. How long have you been manager of that mill?

A. Six years.

Q. What is its capacity? A. Seven hundred barrels.

Q. Seven hundred barrels per day?

A. For twenty-four hours.

Q. Do you use the Alsop bleacher? A. Yes, sir.

Q. How long have you used it? A. Four years.

2180 Q. Four years. Did you make any tests of the bleacher before you put it in your mill under a guarantee from the Alsop Company, before you accepted it?

Mr. Butler: I object to that as irrelevant and immaterial whether it was under a guarantee before he accepted it, or not.

The Court: Yes, he may testify to his tests.

Mr. Butler: No objection if he made some tests.

Judge Scarritt: What I want to show, the reason he made the test—

The Court: He made the test, now, what of it?

Judge Scarritt: I will just state what I want to show, if your Honor please, and I desire to offer to show that this gentleman took the process on a guarantee and that—

The Court: Now, then, you follow up whether there has been a breach of the guarantee or not.

Judge Scarritt: No, the question was—

The Court: I would rather hear the evidence than hear the argument, go on; I cannot for the life of me see what the controversy between the Alsop Company and some miller has got to do with it, but go on, if you want to, air it; go on.

Judge Scarritt: I want to show it, and I object and except to the remarks of the court.

The Court: The point I make is, I see no relevancy, but let's save time and go on.

By Judge Scarritt:

Q. You did buy it on the test guaranty?

Counsel for libelant objected to the question as leading and immaterial.

The Court: Go on.

Judge Scarritt: I withdraw it.

Q. Now, tell what your tests were?

A. The test I made was for shrinkage in weight by the use of this Alsop process.

Q. Speak so the jury can hear you, Mr. Clark.

A. The method of making that test, we went into it very carefully.

2181 Mr. Butler: I move to strike that out.

The Court: That is stricken out, no answer to the question.

A. The test showed—

Mr. Butler: I object to that.

Q. Just state what you did, Mr. Clark, and what the results were. A. Well.

Q. You took how many sacks of flour?

Mr. Butler: I object to that as leading.

Judge Scarritt: I am trying to start him off right.

A. We took twenty-five hundred and forty pound jute sacks of flour and emptied them or dumped them, passed them up an elevator leg through this agitator.

Q. Bleached or unbleached flour when this started?

A. Unbleached when it started through this agitator in which this Alsop gas was introduced; the flour was passed down through another leg of the elevator and weighed off, we weighed the sacks from which we took the flour; we put it into new jute sacks and weighed them; it showed a loss of 37 pounds.

By the Court:

Q. Out of 2500?

A. Out of 25 one hundred and forty pound sacks—about 3500 pounds.

By Judge Scarritt:

Q. About 3500 [hundred] pounds?

A. About 3500 pounds.

By the Court:

Q. I misunderstood, how many pounds were there when you started in?

A. There were 25 one hundred and forty pounds jute sacks.

By Mr. Butler:

Q. How many pounds of flour was there? A. 3500.

Q. Even up to an ounce?

A. I don't say we weighed that flour.

Q. What did it weigh, that is what we have been trying to get at?

Judge Scarritt: Are you examining now?

The Court: I started to ask a question. I do not yet understand how many pounds of flour there were, to start with.

Judge Scarritt: I will get at it.

2182 By Judge Scarritt:

Q. How many sacks of unbleached flour did you use?

A. 35.

Q. 35? A. 35.

Q. What did each sack of flour weigh? A. 25, 25.

By the Court:

Q. Now, there were—I got to make the computation again, which was it? A. 25.

By the Court:

Q. I have to multiply again, now; are you certain it is 25?

A. Yes, sir.

By Judge Scarritt:
Q. You took 25; now, how much did each sack weigh?
A. A hundred and forty pounds.

By the Court:
Q. Sack and all? A. Sack and all.

By the Court:
Q. There you are again, now, that is 3500 pounds; now, how much did the sacks weigh?

Judge Scarritt: He said sack and all, if Your Honor please.

The Court: I know he did; how much did the sacks weigh, they did not bleach the sacks, did they? How much did the sacks weigh?
A. Judge, we weighed the sacks all in a lump after we emptied them.
Q. How much did they weigh?
A. They weighed not quite a pound apiece.

By Mr. Butler:
Q. Well, how much did they weigh?

Judge Scarritt: That is mere quibble.

The Court: Go on.

A. We made the same—
Q. Wait a minute, let's get this straightened out, with all this confusion, half a dozen examining you, no wonder you get confused. You took this 25 sacks of hundred and forty pounds each and passed them [though] the agitator, as I understand? A. Yes, sir.
Q. Now, did you weigh them after they passed through the agitator and after they were bleached? A. Yes, sir.
Q. What was the difference in the weight, did you weigh them in the sacks and all, just the same as you did before.

Mr. Butler: I object to that. I want the weight be-
2183 fore and after.

The Court: He may answer.

A. We weighed the sacks before and after, and in that way—

By Judge Scarritt:
Q. What was the difference in the weight of the flour by a reduction of the moisture in the flour in putting it through this machine?

Mr. Butler: Who said it was a reduction of the moisture? We object to that as assuming something.

Q. Well, is was the same flour, wasn't it?

The Court: You may tell what the flour weighed.

Q. What did it weigh afterwards, tell the jury that.
A. The shrinkage was thirty-seven pounds; that is what I was after; I was after the shrinkage; that is what I was interested in.

Mr. Butler: I move to strike out what he was after.

The Court: It may stand.

By Judge Scarritt:
Q. Now, what other test did you make?
A. We weighed the same flour, that is, the same flour made at the same time, and we passed it up through the agitator in the same manner without the gas.
Q. Without bleaching it?
A. Without bleaching it, and we found a loss of eleven pounds.
Q. Eleven pounds? A. Yes, sir.
Q. There was a loss in the bleaching of flour of thirty-seven pounds in the 3500 pounds and a loss of eleven pounds in the unbleached flour going through the same mill in 3500 pounds? A. Yes, sir.
Q. Did you make any other test?
A. Made a further test by taking this first 25 sacks that we bleached.
Q. And after they were bleached?
A. After they were bleached we passed them up through the agitator.
Q. Without rebleaching?
A. Without rebleaching, and found a loss of seven pounds.
Q. Of seven pounds? A. Yes, sir.

By the Court:
Q. That is simply subjecting it to the air, you say?
2184 A. No gas.
Q. You passed it through the agitator without any gas?
A. Without any gas.
Q. But there was air?
A. Of course there was air in the agitator.
Q. Was the agitator in motion? A. Yes, sir.

By Judge Scarritt: (resuming.)
Q. Just one further question, in the ordinary milling process—

By the Court:
Q. Were these paddles on, or whatever you call them, inside of the agitator, revolving?

A. The real paddles, yes.

By Judge Scarritt:

Q. But there was no gas introduced?

A. No gas introduced.

Q. Now, in your experience—you have used unbleached flour also as well as bleached flour haven't you? A. Yes, sir.

Q. Your experience in the use of bleached flour and unbleached flour, what, in your opinion, is the relative difference between them as to bread making qualities.

A. The bleached flour is better.

Q. Do you remember making flour, it changes the color, the bleaching does, which has been so often testified here; is that your experience? A. Yes, sir.

Q. Makes it whiter? A. Yes, sir.

Q. In your experience, how is the bread made from bleached flour as to its quality and strength and volume, as compared to the bread made from the unbleached flour of the same kind?

A. Better.

Mr. Butler: I move to strike that out as giving his conclusion.

The Court: It may stand, although he testifies as an expert miller, but it may stand, I have not heard any qualifications.

Judge Scarritt: He has been a miller for years, and there is no use to go into all that unless Your Honor wants it; I am trying to save as much time as I can.

2185 Q. The electrifier in your mill is attached to the agitator by pipes the same as has been explained here before?

A. Yes, sir.

Q. How far is your agitator from your electrifier or how long are the pipes between the electrifier and the agitator?

A. About forty or fifty feet.

Q. Have you had to replace any of your pipes in your mill by reason of being rusted out or worn out since the process was put in there?

A. Well you mean these pipes for this agitator, or the steam or water pipes?

By the Court:

Q. The pipes from the electrifier to the agitator?

A. No, sir.

By Judge Scarritt:

Q. Not at all? A. No, sir.

Q. Is Mr. Bullock in your employ?

A. No, sir, Mr. Dolan.

Q. And these pipes have been in there for how long?
A. Four years.
Q. That is all, Mr. Clark.

Cross-Examination

By Mr. Butler:
Q. Did you do this work of weighing, yourself?
A. I superintended it.
Q. Did you mark down the weight of the flour before you put it through to bleach it?
A. I say I superintended it, Mr. Dolan done the actual weighing.
Q. Was it marked down?
A. It was at that time, yes, sir.
Q. Have the figures been preserved? A. No, sir.
Q. You are speaking from memory?
A. I am speaking from memory.
Q. You don't mean to say that a hundred and forty sacks of flour will weigh exactly 3500 pounds?

The Court: Twenty-five sacks, you mean.

A. The sacks were taken right from the—

By Mr. Butler:
Q. I am not asking you where they were taken from; I am asking you what it would weigh, the flour.
A. Yes, sir.
Q. Exactly to a hair.
A. Because they were just weighed as they came from
2186 the mill and marked down there.
Q. How much did the empty sacks weigh, twenty-five empty sacks, what did they weigh?
A. I say I did not preserve those figures.
Q. You don't know?
A. I was after the exact shrinkage, that is all I cared about.

Mr. Butler: I move to strike it out.

The Court: That is stricken out, not an answer.

Q. Your finding is, then, that you lost more than one per cent? A. A trifle more.
Q. If you used the gas? A. Yes, sir.
Q. And less than half of one per cent when you did not?
A. Yes, sir.
Q. Your conclusion is then that the gas does something to the flour, isn't it? A. Dries it out.

Mr. Butler: I move to strike that out. I did not ask him what it did.

Judge Scarritt: I object to his striking that out.

The Court: Yes, that may stand.

Q. All right. Now, you wanted to find out what effect that gas would have on the flour; did you say that was what you were after?

A. I wanted to find out what the shrinkage and loss was, wanted to figure it.

Q. When you were putting the gas in you blew air in, didn't you? A. I don't know as you call it blown.

Q. You had a pump for pumping air in? A. Steam, yes.

Q. If you were not bleaching you did not pump air in, isn't that true? A. Yes.

Q. Now, if you wanted to find out what the gas would do why didn't you pump air both times, once with the gas in it and once without the gas in it?

A. Well, I wanted to find out what the shrinkage was by using this process; it cost money to shrink flour.

Q. You were afraid you would lose money by it?

A. Of course.

2187 Q. That is four years ago. Didn't tell you at that time that it would double the proteids, just as it stated in this patent? A. Double what?

Q. Double the proteins?

A. No, I don't think they did.

By the Court:

Q. What? A. Not that I remember.

By Mr. Butler:

Q. You don't remember?

By the Court:

Q. Do you know what protein is? A. No, sir.

By Mr. Lyons:

Q. Can't hear you? A. No, I do not.

By Mr. Butler:

Q. Do you know what the nutritive value of flour is?

A. I do, in a general way.

Q. Why, didn't these men who were selling you the patent tell you that it would increase the nutritive value, make fat and distribute it all over, and all that? A. No, sir.

Q. Didn't they tell you it would increase the nutritive value?

A. There was nothing of that kind discussed when I put the machine in.

Q. Well, what was your understanding about it, don't you think that it does—well, it is stated in the patent that treat-

ment by the Alsop process increases proteins over twelve per cent of the total, there being about thirteen to start with, and add twelve, would make it about twenty-five, and tell us of course that makes it very much more nutritive; now, is it not your experience that it does make the flour very much more nutritive?

A. My experience is that it makes a better loaf of bread.

Q. Yes, and of greater food value, more nutriment in it?

A. I am not a chemist.

Q. What is that?

A. I am not a chemist, I don't profess to be.

Q. No, neither is a man when he is buying hay for his horse, a chemist, but he knows one kind of hay has more nutriment in it than the other. Now, isn't it your observation that this bleaching process improves the nutriment of the flour, or injures it, one or the other?

A. Well, I can't say as to that.

2188 Q. You don't know about that. Were you here when Dr. John A. Wesener testified? A. No, sir.

Q. Now, your experiment shows that by his treatment a little more than one per cent of the total weight of the flour is lost by bleaching? A. Yes, sir.

Q. Now, will you say that that is the uniform thing, and that .14 of one per cent is not the truth?

A. I don't understand the question.

Q. It has been asserted here that .14 of one per cent is the amount of loss of weight by bleaching. Now, do you disagree with that and say it was seven times as much, seven or eight times as much as that?

A. No, it would not be seven.

Q. What is that? A. I found a loss of eleven.

Q. No, no, by bleaching, I am speaking of per cents; you lost one per cent, and it has been asserted here by a man who has examined a great many thousand of samples, and he makes it about one-seventh of one per cent.

Judge Scarritt: I object to that as commenting on the other witness's testimony.

The court sustained the objection.

Q. Well, was there more than one-seventh of one per cent, as a fact?

A. Our experience showed it to be more than one-seventh of one per cent; that is all I know.

Q. Did you lose any flour in that experiment?

A. No, sir, only what we accounted for. You have overlooked the fact of the other eleven pounds, which of course it lost.

Q. The other eleven pounds were lost on some other flour?
A. It is the same flour, the same loss.
Q. Well, I know, some more of the same kind of flour?
A. Yes, but the net result is a difference between eleven and thirty-seven.
Q. But then you put the flour through again and it only lost seven? A. Yes, sir.
2189 Q. Why didn't you put it through once more. Is it a good thing to dry flour out when you are milling it?
A. In a reasonable way, yes, sir.
Q. Well, it is a reasonable way to run it through the agitator with pure air in the agitator? A. Yes, sir.
Q. Why don't you dry it out that way instead of putting nitric acid in it?

Judge Scarritt: We object to that because not based on any testimony in this case.

Q. Why don't you dry it out in that way? [A.] Withdraw that question. Why don't you dry it out that way instead of putting this gas in?
A. Well, it might be worth trying, I don't know.

By the Court:
Q. Where do you think this loss went, in the agitator and in sacks? A. Moisture.
Q. Where did it go to? A. In the air.
Q. How did it get out into the air?
A. The agitator is not air-tight, and it travels up the leg of the elevator and down through the spout and these bins, that is, they are not exactly bins, but you know it will get away.

By Mr. Butler:
Q. Do you smell the gas, did you smell the bleaching gas?
A. No, sir.
Q. The place is too tight for the gas to get out, isn't it?
A. The agitator, yes, it is, I don't think the gas is strong enough to smell that.
Q. The pipe wouldn't let it out. You don't think that thirty-seven pounds of water evaporated in this gas was strong enough to smell?
A. You ask if I smelled it?
Q. Yes? A. I didn't smell it.
Q. Were you there? A. Yes, sir.
Q. Did you ever smell any bleaching gas around your mill?
A. Where the electrifier is, yes, sir.
Q. That is, where it is made? A. Yes, sir.
2190 Q. You smell it where it is made. Did you ever smell it where it bleaches the flour? A. No, sir.

Q. Did you ever try? A. Yes, sir.
Q. It does not smell while it is in the agitator of your mill?
A. In the agitator it smells.
Q. It smells at the electrifier, at some mills in the agitator; does it smell where the flour comes out of the agitator?
A. No, sir.
Q. What do you think becomes of that, you say it all goes off in the air, moisture and everything, thirty-seven pounds in this experiment; what do you think becomes of the gas that smells where it is made and smells where it goes into the flour; where do you think that smell goes to?
A. I expect it goes into the air, it is so slight, though.
Q. But you don't smell it in the air?
A. So slight I don't suppose you notice it.
Q. You don't smell it in the air?
A. No, it is a large room like this.
Q. You smell it where it is made and smell it at the agitator?
A. Where it is made it is in a small room.
Q. And after it goes into the flour you never smell it again, is that true?
A. I don't smell it in the flour, no, sir.
Q. So the smell must stay in the flour?
A. You don't smell it in the flour.
Q. Your machine is making the smell, isn't it?
A. Yes, sir.
Q. And you are leading the smell into the flour, aren't you?
A. Yes, sir.
Q. And it smells when it goes into the flour, doesn't it?
A. It is only a slight smell there.
Q. And that is the end of the smell, isn't it?
A. As far as I know.
Q. So the smell stays in the flour, doesn't it?
A. I don't know whether it does or not.
Q. You don't care either, do you?

2191 By Judge Scarritt:
Q. Did you ever smell it in the flour?
A. No, sir.

By Mr. Butler:
Q. Did you ever try it? A. Yes, sir.
Q. Had occasion to try it?
A. Well, I wanted to see what effect it would have.
Q. When did you try it?
A. When I first started the machine up.
Q. What made you think it might smell in the flour; what made you suspicious of it?

A. When I saw these electrodes and the small plant that was there I wondered whether it would do any work at all or not, it didn't seem possible.

Q. How many horse-power do you think?

A. How is that?

Q. How many horse-power did you use?

A. To prove this machine?

Q. Yes.

A. About two horse-power, one and one-half or two horse-power.

Q. What is your capacity?

A. Seven hundred barrels.

Q. What is your power in kilo watts or horse power to make electricity to make this gas?

Judge Scarritt: The dynamo.

A. About two and one-half amperes.

Q. Well, what kilo watt is it, what horse-power is it?

A. 500 volts.

Q. Volts, yes, but what horse-power is it?

A. I am not an electrician.

Q. Well do you know of any that is made less than five-horse power by the Alsop? A. I don't know.

Q. No, do you know how much nitric acid that flaming arc will make in a year at five horse-power?

A. No, I do not.

Q. Do you say that it will not make seven thousand pounds of nitric acid in the air?

Counsel for claimant objected to that question.

The Court: He says he doesn't know anything about it.

Q. You don't know anything about it.

Redirect Examination

By Judge Scarritt:

2192 Q. You understand and what Mr. Butler means by nutrition or nutriment? A. Yes, sir.

Q. That is the quality of the bread and flour as a food?

A. Food value.

Q. Food value. Now, what do you say as to the relative food value of bleached and unbleached flour when made into bread? A. Well, Judge,—

Q. Which is the best?

A. I consider the bleached the best.

Mr. Butler: Judge, did you mean as to food value?

Judge Scarritt: Food value, he considers the bleached the best, he says.

Mr. Butler: Does he mean by that greater food value?

By Judge Scarritt:

Q. I understood you to say that you considered the bread made from the bleached flour the best? A. Yes, sir.

By the Court:

Q. You mean by that greater or less strength?

A. It is greater strength.

By Judge Scarritt:

Q. Now, he has asked you about your memory. Do you remember distinctly the differences in weight that you have stated here? A. Yes, sir.

Q. That is the amount of shrinkage, you remember that distinctly? A. Yes, sir.

Q. Now, is this flour or this bread that is made from this bleached—by this bleaching process—rancid flour, or rancid bread? A. No, sir, it is sweet.

Q. Or sour? A. No, sir.

Q. Or bad? A. No, sir.

Q. Or yellow? A. No, sir.

Recross Examination

By Mr. Butler:

Q. You are still bleaching? A. Yes, sir.

Q. Bleach clears? A. No, sir.

Q. Do you sometimes send your flour to the Kansas City Milling & Export Company of this city? A. Yes, sir.

Q. Do they sometimes sell it? A. Yes, sir.

2193 Q. Under what brands? A. Usually under "Stability".

The Court: "Stability" brand?

A. Stability Brand.

By Mr. Butler:

Q. This is a clear flour? A. Yes, sir.

Q. Bleached.

A. You mean now—what time are you talking about?

Q. Any time?

A. The present time, I wish to qualify my remark as to the bleaching, that we bleach for Missouri at the present time.

By the Court:

Q. How is that?

A. We bleach for Missouri, the state of Missouri. You asked me if we bleach now. I said yes, we bleach for the state of Missouri.

By Mr. Butler:

Q. I asked you if you ever bleach clear?

A. Ever bleach clear, yes, sir.

Q. And you furnish it to the Kansas City Milling & Export Company? A. If they would order it.

Q. Bleached flour?

A. If they ordered it bleached we bleach it.

Q. One of your cars of flour is under seizure by the government at Nashville, Tennessee, now, as clear flour that was bleached? A. Yes, sir, that is the kind.

Q. And you have defaulted in it, haven't answered it or claimed it, but allowed it to go to condemnation and destruction by default?

Counsel for claimant objected as incompetent, irrelevant and immaterial and not the best evidence.

The Court: He may answer.

A. We have filed our answer.

Q. When? I will advise you that the district attorney within a week said "that is in default, and I have been trying to find the owner to tell him that if he wants to have a lawsuit down there he had better apply to the court. Now, if you are the man you better apply to the court.

A. I am not the Kansas City Milling & Export Company.

Q. So you are not interested in the flour any more?

A. I am, to a certain extent, of course, but I understand
2194 they filed their answer, I don't know.

Q. I will advise you that it has not been filed

The Court: He thinks it has.

Witness: Wait just one minute there, a question of my veracity here.

Q. Well, I am giving you the information?

A. I am much obliged.

Mr. Butler: If you don't want the flour destroyed by default.

The Court: No, it is a proper question, not as to your veracity. Mr. Butler says he is in default, and the witness thinks he is not, so I don't know.

Witness: We don't want to be in default, Mr. Butler.

Mr. Butler: I thought I was doing you a favor to give you a chance to fight for your flour if you think it is all right.

Mr. Elliott: May I just interpose a word, I understood from Mr. Butler when the matter of trying this case was discussed, that he would give me what time was necessary to file an answer.

Mr. Butler: You never appeared in that case, Mr. Elliott.

Mr. Elliott: You did not specify any particular case, and I did send the answer to Mr. Clark.

The Court: So it is a misunderstanding down at Nashville.

Mr. Butler: Better attend to that. (To Mr. Elliott): You don't appear in it?

Mr. Elliott: Well, perhaps so.

By Mr. Butler, (resuming):

Q. Now, what percentage is that flour? A. The clear?

Q. Yes. A. About 17 per cent.

Q. 17 per cent. You hold that bleaching changes clear flour, don't you? A. You say I hold—

Q. You hold that this bleaching process cannot apply to the clear flour, don't you? A. I don't think so.

2195 Q. You think it improves the clear, don't you?

A. I have my views about it.

Q. You don't think it improves the clear?

A. It improves the color.

Q. Oh, then, it improves the color?

A. It improves the color.

Q. Makes it a little lighter?

A. Makes it a little lighter, but at the same time it shows up the imperfections.

Q. What did you bleach it for?

A. You want me to answer that?

Q. Oh, yes, I want to know why you bleach 17 per cent clear.

Judge Scarritt: Let him answer.

Q. I want to know why you bleached 17 per cent clear?

A. The Kansas City Export & Milling Company had a car of flour down there at Augusta, Georgia, that was unbleached, and the man refused it on account of color. The manager of the Kansas City Milling & Export Company sent to us for a sample of bleached clear; they took it and sent it down to that man, and they sold him this carload of flour on that basis. On the way down the flour gets seized at Nashville.

By Judge Scarritt:

Q. They ordered the bleached flour?

A. They ordered the bleached flour.

By Mr. Butler:

Q. Now, then, let me see if I understand this right.

A. Now, one word more, if you will pardon me.

Q. A good many.

A. That is the first car of bleached flour that the Kansas City Milling & Export Company ever had.

Q. You don't know where they got their flours, do you?

A. Well, I happen to be vice-president of that company.

Q. Oh, you are vice-president, so we have got the miller and the exporter here. Now, let us see now, as I understand you had a customer in Georgia had some flour that was unbleached?

A. Yes, sir.

Q. And it was so dark and unattractive in appearance that he would not take it?

A. He kicked on the flour on account of its color.

Q. Was that your patent? A. No, sir.

Q. Was it a patent flour? A. It was a clear flour.

2196 Q. A clear unbleached flour, so that he was all satisfied except the appearance?

A. That seemed to be the trouble.

Q. So that in order to satisfy him with respect to the appearance you took a 17 per cent clear and bleached it and sent it to fill the order?

A. We sold it on a sample of the 17 per cent clear.

Q. The man who would not take the unbleached flour because of color was satisfied with a sample of bleached 17 per cent clear? A. He seemed to be, he bought on the sample.

Q. So that a bleached 17 per cent clear is better as to color than an unbleached 17 per cent clear? A. Yes, sir.

Q. That is the reason you bleached it, wasn't it, to make it look better as to color?

Judge Scarritt: He said he bleached it because he ordered it bleached.

Mr. Butler: I don't want you to help this man; he is vice-president of the Export Company and the mill and flour tester and all.

Q. Now, then you do not support the proposition, do you, that bleaching will not improve the color and appearance and salability of clear flour, 17 per cent clear, short clears, as short as that, do you? A. I don't understand your question.

Q. You cannot understand that. Did bleaching improve the color of the flour that was seized at Nashville? A. Yes.

Q. Bleaching will improve the color of all similar clear flour, will it not? A. Well, it will age it.

Mr. Butler: I move to strike out the answer.

The Court: That will be stricken out, not an answer.

(Question read by the reporter.)

A. I would say it would improve it.

Q. That is the reason you bleached clears, isn't it, to make it more salable, improve its quality, make it of greater nutritive value? A. No, sir.

Q. Why do you bleach it then?

A. Bleach it because the people want it, when they want it.

2197 Q. And that is because it is more salable, isn't it?

A. I should think so, yes, sir.

Q. Have you with you an order for bleached flour?

A. How?

Q. Can you produce me an order in writing for bleached flour? A. This car that I speak of was ordered bleached.

Q. Can you produce that order? A. I haven't it with me.

Q. Can you produce it? A. I think I can.

Q. Who was the consignee?

A. The Kansas City Milling & Export Company.

Q. I know, but the Kansas City Mill & Export Company—

By Judge Scarritt:

Q. Which was the final purchaser.

A. No, I don't know the—

Q. Oh, you might get some orders for bleaching from that house, from the brokerage house, or the manager might give an order for bleaching to the miller, but I want an order for bleaching from that Georgia customer?

A. No, I have not that.

Q. You never saw that, did you? A. No.

Q. There is none such, is there? A. I don't know.

Q. Sir? A. I don't know.

Q. You don't mean to say he ordered the flour bleached?

A. I don't know, he bought it on a sample.

Q. Certainly, certainly, he found flour that was off in color and then your Kansas City Company showed him a sample and he bought on that?

A. I don't know whether they told him it was bleached or not; I am not running their business, you know.

Q. But they showed him a sample, you say?

A. It was sold on sample.

Q. Well, they would have to show him a sample?

A. Yes, sir.

Q. And then they ordered you to bleach it?

A. They ordered it just like the sample.

Q. And they sent you the sample?

A. He sent me the sample.

Q. You bleached it, you didn't have this sample from the Export Company?

A. Oh, we had our sample; we had our part of the sample on file.

Q. Did you furnish the bleached sample for the sub-
2198 stitute for this unbleached flour?

A. When we sent the Export Company the sample—

The Court: They sent it on to Georgia?

A. They sent it to Georgia.

Q. You bleached a sample and sent it on?

The Court: You kept part of the sample and sent part to Kansas City?

A. We always do that.

By Mr. Butler:

Q. If you sell on sample, I suppose you sent up here to your Export Company a sample of bleached flour and retained part of it? A. Yes, sir.

Q. And retained part of it? A. Yes, sir.

Q. Then this man objecting to the car as having too dark a color, they furnished him that sample, as you understand?

A. I think so, I don't know for sure.

Q. Then they ordered you to bleach a car of flour for him according to that sample of bleached flour that you furnished them to send to him.

A. Yes, sir, that is the ordinary way for bleached or unbleached flour; we keep samples, you know.

Q. So the ordinary way is this, you bleach some samples and send them out, and if the color is approved, and the quality and every thing, then you bleach to that sample?

A. Now, understand me, we keep samples there bleached or unbleached so as to protect our trade.

By the Court:

Q. Send on half and keep half?

A. So we have something on file.

Q. And you bleach to the sample color?

A. Also when we run the flour to the unbleached, we have to make it like sample, that is part of the contract.

Q. You mill it to it, you either mill it in one case or bleach it in the other case to it? A. Well, can only mill—

Q. I know, but you can control color by milling?

A. Yes, sir.

Q. And if you do not bleach, you control it by milling, and if you do bleach you control it by bleaching, isn't that it?

A. Well, you might destroy—you might hurt the quality of flour by milling.

Q. Yes, so the reason you do not mill the color is because you might injure the flour, is that it?

A. Make it too soft.

2199 Q. And danger of poisoning it by milling it too much?

A. Make it heavy; I don't know whether it would poison it.

Q. What is that? A. No, I guess make it heavy.

Q. Make it heavy; so then, as I understand it, you are bleaching because you injure the flour if you control color by milling?

A. It does injure the flour; injures the working of the flour.

Q. But by bleaching you know you can improve its food value and its color at the same time? A. I think so.

Q. Why don't you bleach it all and give us the benefit of good food values all the time?

A. A man [is] running a flour mill has to cater to his trade.

Q. Now, isn't it the law down in Georgia, don't you know it is the law down in Georgia, that they cannot sell any bleached flour in that state?

A. I didn't know it at that time, Mr. Butler.

Q. But you found it out at that time, didn't you?

A. I found it out afterwards.

Q. And now isn't it because the statute law of Georgia makes it a crime for any man in the state of Georgia to have for sale or expose for sale in that state any artificial bleached flour, isn't that the reason?

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial and not the best evidence.

The Court sustained the objection.

Redirect Examination

By Judge Scarritt:

Q. You speak of injuring flour by bleaching, you mean by attempting to make it white by milling?

A. By milling, yes.

Q. That makes it soft so that it is not good for bread, is that right? A. Not as good.

Mr. Butler: That is objected to as leading.

The Court: Well, anything further with this gentleman.

Judge Scarritt: No, sir; that is all.

2200 J. C. Dolan, called as a witness on the part of Claimant, being duly sworn, testified as follows:

Direct Examination

By Judge Scarritt:

By the Court:

Q. State your full name? A. J. C. Dolan.

Q. Where do you live? A. St. Joseph, Missouri.

By Judge Scarritt:

Q. Are you connected with the Davis Milling Company at St. Joe, Mr. Dolan? A. Yes, sir.

Q. Did you assist Mr. Clark, the manager of the mill, in making these tests that he has spoken of in his examination?

A. Yes, sir.

Q. State to the jury what you did.

A. Well, we first weighed up twenty five sacks of fresh flour right off of the mill.

By the Court:

Q. Unbleached? A. Yes, sir, fresh unbleached flour.

Q. Speak so the jury can hear you?

A. Ran it through the agitator, bleached it, backed it off, found a loss of 37 pounds; we ran up the same amount of unbleached flour, without bleaching, we found eleven pounds less.

By the Court:

Q. Was the first unbleached?

A. The first was unbleached, but we bleached it as we ran it through.

Q. A loss of 37 pounds? A. Yes, sir.

Q. The second experiment? A. Was 11 pounds.

Q. The same wheat? A. Yes, sir.

Q. And it came out bleached with a loss of—

A. Unbleached.

Judge Scarritt: Came out unbleached.

By the Court:

Q. The second you ran through the agitator in the air?

A. Yes, sir.

The Court: Yes, I see.

By Judge Scarritt:

Q. Came out with a loss of 11 pounds?

A. Yes, sir; then we ran twenty-five sacks of bleached flour to determine the actual loss in handling, and that was 7 pounds.

Q. That is the same flour that you bleached and lost the 37 pounds of?

A. Yes, sir; we ran it over the same machine to determine—the loss of actual handling.

By the Court:

Q. Bleached or unbleached?

A. We ran the bleached flour over the machine without any gas, the same machine.

Q. Did you run it through the agitator? A. Yes, sir.

Judge Scarritt: With a loss of 7 pounds.

A. Just the same, it took the same track.

By the Court:

Q. Were the agitator paddles in motion?

A. No paddles in it.

Q. There was something you call them paddles or something? A. There is some flights fastened inside solid.

Q. Something that mixes the flour up into a collection of dust in there? A. Yes.

Q. Whether you call them paddles or not; I never saw one of them, I don't know.

By Judge Scarritt: (Resuming)

Q. Let see if I understand it. The first batch of 25 sacks, how much did they weigh? A. 140 pounds, 3500 pounds.

Q. You ran through the mill and bleached it?

A. Yes, sir.

Q. And weighed it and found a loss in shrinkage of 37 pounds? A. Yes, sir.

Q. Then you took the same amount of flour and ran it through the mill without bleaching it and got a loss of 7 pounds? A. 11 pounds.

Q. I mean 11 pounds, then you took this same flour that had been bleached and ran it through the mill with the bleacher in operation, and found a loss of 7 pounds? A. Yes, sir.

Q. Showing a loss in bleaching of the difference between 37 pounds and seven pounds, which would make a net loss of 30 pounds? A. A net loss of 30 pounds in bleaching.

Q. Now, you were present at these three experiments that were made by yourself and Mr. Clark? A. Yes, sir.

Q. Did you make any other experiments of the same nature?

A. Yes, sir.

Q. How many?

A. I made two or three before and two or three after, I don't remember just how many, they were all practical-

2202 ly the same, the figures came out just about the same percentage.

Q. That is, no appreciable difference in nine or ten experiments? A. No, sir.

Q. In the loss—

Mr. Butler: He didn't say nine or ten experiments.

Judge Scarritt: He said about the same.

The Court: Go on.

Q. Well, was there any appreciable difference in the loss in all of your experiments, and did they come out about the same? A. Just about the same.

By the Court:

Q. I don't know as I understand this or not. Now there is 140 pounds to the sack? A. Yes, sir.

Q. That is, sack and flour both? A. Gross weight.

Q. Twenty-five sacks would equal 3500 pounds?

A. Yes, sir.

Q. Of flour and sacks? A. Yes, sir.

Q. So then you would have 3500 pounds, minus 25 for the sacks? A. No, sir, they don't weigh 25.

Q. Would they weigh about a pound apiece?

A. No, sir, not quite.

Q. Well, pretty nearly?

A. 13½ ounces a piece generally.

Q. Well, we call it a pound.

A. All right, you can call it that.

Q. Then you have 3500 minus 25, minus 37, for loss in weight, wouldn't you? A. Yes, sir.

Q. Plus the weight of the new sacks, would that be it or not, I am trying to find out?

A. I believe you have got it right, I don't understand.

The Court: Well, go on.

A. We weighed our new sacks, and we weighed the sacks. we dumped to determine our actual loss, and weighed the stuff in new grades and different grades.

By Judge Scarritt:

Q. Yes, so that your shrinkage is the exact shrinkage of the flour taking out the weight of the sacks?

A. Yes, sir.

2203 Objected to as leading.

Q. Both before and since.

The Court: He may answer.

Q. What effect does bleaching have on flour?

A. Whitens the flour; it is a better loaf of bread to me.

Q. What with reference to the moisture?

A. It draws part of the moisture, gives the flour a little more absorption.

By the Court:

Q. Sir?

A. Gives the flour more absorption, takes out some of the water.

Q. And what effect does it have on the bread making quality of the flour?

A. Makes it whiter and more wholesome and better looking on the table.

Q. Have you made any experiments in that line or baked bread? A. Yes, sir.

Q. To ascertain that—how long have you been in that mill, Mr. Dolan? A. Six years about.

Q. And the bleacher has been there four years?

A. Just about four.

Q. Have you made any change in your pipes in the bleacher since the mill was started, the process was started?

A. Change in the pipes, what do you mean by that?

The Court: From the electrifier over to the agitator.

A. Do you mean changed or renewed?

By Judge Scarritt:

Q. Renewed. A. No, we have not renewed any.

Q. Have you had any pipes eaten out by the gas during that time? A. No, sir.

Q. Had to make a change on that account? A. No, sir.

Q. Have you had any observation or experience as to the time that flour will last as to the length of time with flour mills? A. Well, I have had some experience.

Q. What is that?

A. Yes, I have had some experience in that; I don't know what the length of time would be; I have known flour to be seven years old and ate it.

Q. How is that?

A. I have known flours to be seven years old and ate it; it was good.

Q. Was it good flour? A. Yes.

2204 Q. Are you head miller there or what is your position?

A. Yes, sir.

Q. Head miller? A. Yes, sir.

Robert G. Bullock, called as a witness on the part of the Claimant, being duly sworn, testified as follows:

Direct Examination

By Judge Scarritt:

By the Court:

Q. What is your name? A. Robert G. Bullock.

Q. You live where? A. Crete, Nebraska.

Q. That is out west of Lincoln 25 or 50 miles?

A. 20 miles.

By Judge Scarritt:

Q. Are you connected with any flour mill in Crete, Nebraska, Mr. Bullock? A. Yes, sir.

Q. What is it? A. The Crete Mills is the Company's name.

Q. Did they use the Alsop process? A. They do.

Q. How long have they used it?

A. Since October 11, 1904.

Q. Have you been there during that time?

A. All that time.

Q. What is your position in the mill? A. Head miller.

Q. Had charge of the mill all that time? A. Yes, sir.

Q. Have you used the same pipes in the mill during that time from the electrifier to the agitator? A. Yes.

Q. That is, conducting the gas from the electrifier to the agitator? A. Yes, sir.

Q. Have there been any changes made in these pipes by reason of rusting, or anything of that kind?

A. There has not.

2205 Q. Used the same pipe all the time?

A. The same pipes.

Q. I hand you a piece of pipe—

The Court: Rubber or iron?

Q. Iron, wrought iron. Iron pipe, marked "Exhibit 271" and ask you if it is a piece of pipe that you used there for six years? A. It is.

Q. I will ask you if the balance of the pipe that you have there is in the same state of preservation that that is?

A. It is equally good.

Q. All of it. Now I will ask you if that pipe is the same kind of pipe as the exhibit which I show you, which is marked exhibit "Government Exhibit 14"? A. It seems to be.

Q. It is the same isn't it? A. A black iron pipe.

By the Court:

Q. What is it, cast or wrought iron or what?

A. Supposed to be wrought iron.

Q. It is wrought iron too?

Mr. Butler: I object and move to strike out Judge Scarritt's testimony.

The Court: Well, I don't know.

Q. This is not galvanized iron pipe, is it? A. No.

Q. Now this is a piece of the pipe that the gas passes through, as I understand it, from the electrifier to the agitator? A. Yes, sir.

Q. And have you been bleaching all the time for six years?

A. Nearly all the time.

Q. And all the time you have been bleaching this pipe has been used. A. Yes, sir.

Q. Does this carry all the gas made near the agitator or that is I mean electrifier?

A. This carries to one agitator.

Q. How many agitators do you use? A. Two.

The Court: That is after it forks.

Q. This is after it forks and goes to one agitator?

A. Yes, sir.

Q. Do you use the two agitators all the time?

A. No, not all the time.

Q. Has this pipe been in the agitator that you have used, what is the difference, do you use one about as much as
2206 the other on the flour?

A. One is used more than the other, that is.

Q. Is this from the agitator that is used the most or the least? A. The most.

Q. And it has been in practical use. Practically in use during the whole of the six years? A. All the time.

Q. Have you any other pipe in your mill that does not carry the gas from the electrifier to the agitator?

A. Yes, sir, steam pipes.

Q. How is that? A. Steam pipes.

Q. Does that carry any gas at all—before proceeding to that, I will show you "Exhibit 272" and ask you if that is also a piece of pipe and a piece of the hose that you use on your machine? A. It is.

Q. That is near the electrifier, isn't it?

A. The hose attached to the electrifier.

Q. And this pipe, the pipe which is marked "Exhibit 273" carries all the gas? A. All the gas we ever generated.

Q. All the gas you ever generated, and the rubber pipe attached to it carries all the gas you ever generated?

A. It is not carried all—the hose is two years old.

Q. You have replaced the hose? A. Yes, sir.

Q. Why did you replace it?

A. Because the heat of the machine dried the hose out and made it brittle and cracked.

Q. The heat of the machine dried the rubber hose out?

A. Yes, sir.

Q. But this has been on two years? A. Two years.

Q. How long has the other hose been on that particular one? A. Somewhere between two and three years.

Q. But this pipe that is attached to the hose has been on there for the six years? A. Six years.

Q. Now I asked you if you had any other pipe that was not connected with your electrifier, and you said yes. Is this the pipe? A. That is a piece of the steam pipe.

Q. A piece of the steam pipe. Is that connected in any way with the gas at all? A. No, not at all.

2207 Q. No gas goes through it? A. No, sir.

Q. What goes through there? A. Steam.

Q. And water?

A. Steam and water, condensed water.

Q. Condensed water from the steam. How long has that been actually.

A. Since the summer of 1907, three winters; it is a part of the radiator.

Q. That is three years? A. Three years.

Q. And there is nothing but steam and condensed water that has been going through that? A. Nothing.

Q. Is that the same kind of iron as the other in this that you have presented here? A. Yes.

Q. The same kind of iron. Is there any eating out of that pipe by the water and steam that goes through it?

A. It has a hole in it.

Q. It has one there. Which part of the pipe is down; is this part of the pipe down?

A. That part of the pipe was down.

Q. And the water ran through there? A. Yes, sir.

Q. And do you notice a hole there that is eaten out by the gas or the air, or whatever it was? A. I do.

Q. And a little trough made by the passage of the water?

A. Yes, sir.

The pipe referred to by the witness was marked by the stenographer Exhibit 273.

Judge Scarritt: I introduce these exhibits in evidence.

The Court: Very well.

Cross-Examination

By Mr. Butler:

Q. This pipe that you have described as a water or steam pipe, is it an open pipe or closed pipe when it is in use?

A. Closed pipe.

Q. And was it full of water all the time?

A. No, it is part of the radiator.

Q. Part of the ordinary heating radiator?

A. Yes, a coil of four pipes along the wall.

2208 By the Court:

Q. For heating? A. For heating the mill.

By Mr. Butler:

Q. Your experience is that heating radiators eat out in about three years?

A. Not always, but this one did.

Q. Generally?

A. In three or four years, yes sir.

Q. And you brought this in here to prove to this jury that a heating radiator only lasts about three or four years in your mill, is that right?

Judge Scarritt: We object to that as incompetent, irrelevant and immaterial and improper examination.

The Court: He may answer.

To which ruling of the court claimant than and there duly excepted.

A. That it might eat out is why I brought it.

Q. Well, is it your experience as a man familiar with heating pipes about houses and mills that the steam pipes in the ordnary steam radiators will last only about three years?

A. I have had them eat out in three years.

Mr. Butler: I move to strike out his answer as not responsive.

Judge Scarritt: He has asked about his experience, and he is telling it from his experience, and I object to it being stricken out.

The Court: I think it should be stricken out.

To which ruling of the court claimant then and there duly excepted.

Q. Is it not known to you that ordinary steam pipes used in steam radiators last indefinitely?

A. Sometimes they do.

Q. Generally they do, do they not?

A. More frequently than that they eat out, I think.

Q. Last from generation to generation?

A. I don't know about that.

Q. Well, you have known some, haven't you, for twenty years still in use? A. No.

Q. Don't you use steam heating a good deal in Nebraska?

A. Yes, sir.

2209 Q. Don't you know that schoolhouses and your own house and the courthouse and all those places that use steam, don't you know that they last as long as the building does, as a rule?

A. I don't know, I think they last a good while, but I don't know how long.

Q. Well, was it your idea that you could convince the jury by bringing in this pipe, that steam ate out pipes in about three years?

A. That it might eat out pipes.

Q. What is your idea about that, what makes it eat out one and not the other? A. I don't know.

Q. Some impurity in the water, you imagine?

A. It might be.

Q. A little nitric acid will do it, won't it?

A. I don't know.

Q. Don't know about that. Did you clean this exhibit rubber hose which you brought in here? A. No.

Q. It keeps as clean as that, does it, uniformly?

A. Yes, sir.

Q. The defense in this case has brought in quite a number of this rubber hose from various mills, and everyone that was brought in, by putting my fingers into it, as I did in the presence of the jury each time, like that, the fingers would come out as if they were covered with lamp black, and on this they come out apparently unchanged in color. Can you tell us why it is there is such a difference? A. I cannot.

Q. Between your mills and other mills?

A. I cannot.

Q. You cannot. Now, then, take the iron that is fastened to this rubber, it is practically clean, is it not?

A. It seems to be.

Q. As clean as though it came from the factory, isn't it?

A. I don't know.

Q. Well, you have seen new pipes that are shipped in commerce? A. Yes.

Q. And that pipe is just as clean as a new pipe shipped in commerce, isn't it?

A. It is a good pipe, yes.

Q. And it is just as clean on the inside, isn't it?

A. I never examined there, you know.

The Court: Put your finger in it and see.

A. Yes, I guess it is.

Q. Just as clean, the screws on this pipe are just as
2210 sharp, are they not, as though it had just come from the die, aren't they? A. Yes, sir.

Q. The hose looks in all respects like a new hose?

A. No, sir.

Q. No, I guess not. A. It is dry, hard.

Q. It is dry and hard. What did you cut it in two for, why didn't you bring it all?

A. Because I could not get it out without breaking, I sawed it in two.

Q. You could not get the rest out without breaking it, it was so brittle; how long was that hose used?

A. Three years.

Q. The other one was so brittle that it broke? A. Yes.

Q. But no dirt ever accumulated in it?

A. No, it stands vertical.

Q. Did this pipe that you brought in here stand vertical too?

A. The big piece is not, it is horizontal.

Q. Do you ever clean out your pipe? A. Yes.

Q. How often do you clean them out?

A. Why, not at stated intervals, they are never filled up.

Q. I guess you will have to do a little better than that; you will have to tell us a little more definitely; how often did you clean out your pipes there?

A. I have never taken the pipe down to clean it out.

Q. How often do you clean out your pipes there. I don't care whether you take them down or blow them out, I want to know how often you clean them out?

A. I cleaned them out, I think, about four times the length of time we have had them.

Q. You cleaned them out about four times?

A. To see if there was any dust.

Q. Was there any dust in it? A. There was some.

Q. What keeps the surface of this pipe so clean?

A. Nothing but sweeping, I suppose; it is brushed every day.

Q. You notice that that pipe is not as clean as the other one, the other iron pipe that is fast to the hose, don't you?

A. Yes, sir.

Q. How do you explain that?

A. The electrifier is oiled a little, and I suppose the oil prevents that from rusting, this one is closer.

2211 Q. You think it is near the electrifier where the heat is, you think that the acids don't have a chance to work as well, is that it?

Counsel for the claimant objected.

The Court: He may answer.

A. I don't know about the acid I think it does not rust.

Q. You observed that it does not rust near the agitator?

A. No.

Q. Near the generator, you mean?

A. Generator, electrifier.

Q. But does it rust more near the agitator?

A. Yes, sir.

Q. How often do you clean out the steam pipes?
A. Never did.
Q. Why? A. I never took it down.
Q. Why didn't you clean that out?
A. I suppose it had nothing but water in it to work.
Q. You thought there was nothing but air in the bleaching pipes, isn't that all?
A. They might draw dust from the air.
Q. Might draw dust from the air from the outside. Do you blow dust into your flour? A. Not intentionally.
Q. Well, it could not draw the flour in because it is blowing into the flour, got the pump blowing it in?
A. It has to draw air from somewhere, it blows air out of doors.
Q. Yes, I understand, so you can clean out the pipes by blowing air through them, can you? A. Yes, sir.
Q. And all the time you are bleaching you are blowing air through them, aren't you? A. Yes, sir.
Q. That has a tendency to clean them out all the time, doesn't it, to keep them clean; so your idea is that if there is any dust formed in there by this gas, and the pipe the way your plant is, the air going through there keeps blowing it out?
A. I presume so, if there is any formed.
Q. So that if there would be any nitrates of iron formed by nitric acid here, your idea is that when it became detached and loose it would be blown right into the flour, isn't it?

Counsel for claimant objected as assuming that nitrate or nitric acid or anything else except common rust was in that pipe.

2212 The Court sustained the objection.

Q. Well, if there is any rust, any accumulation, or anything, no matter whether it comes from the atmosphere or anything else, that gets loose in that pipe, it is blown right into the flour?
A. No, I don't think so, the pressure is not great enough if there were any in it, I don't think.
Q. Do you have a storage tank there? A. No.
Q. You just have a straight system? A. Yes, sir.
Q. No storage tank at all? A. No storage tank.
Q. You blow it right into the flour, the gas right into the flour from your machine? A. Yes, sir.
Q. Find it works satisfactorily? A. Yes.
Q. Find that it improves the flour?
A. Leaves it whiter.
Q. Naturally ages it, makes it taste better, and makes it richer in food value? A. I don't know anything about that.

Q. Makes a more beautiful loaf of bread, more healthy, raises the volume of the loaf and tastes better?
A. Makes a whiter loaf of bread, that is all I know about it.
Q. You find clears cannot be bleached by this Alsop process, don't you? A. We don't bleach clears.
Q. Well, you have tried it sometimes? A. Yes.
Q. By that process, and you find it destroys impurities?
A. No.
Q. Improves the appearance of them?
A. It makes the impurities show up more prominently.
Q. And hurts the appearance of clears?
A. Why, to my point of view it does.
Q. Now, you take the clears and mix them sometimes with the others? A. No.
Q. What percentage do you make down there?
A. We make flour as good as 75 per cent and from that up to the limit.

By the Court:
Q. Up to what? A. To the full limit.
Q. When you make 75 per cent what do you call the balance?
A. Clear and low grade.
2213 Q. Clear and low grade, never bleach any of that together? A. No.
Q. What is the shortest flour you make?
A. When we make a ninety per cent flour we make a 3 per cent low grade and seven per cent clear.
Q. Do you ever try to bleach the seven per cent clear?
A. Experimentally, yes.
Q. It won't work?
A. It does not make it look any better to my mind.
Q. It improves the flavor, doesn't it?
A. I don't know anything about that; I never tried it for flavor.
Q. Well, weren't you asked in direct whether it improved the bread? A. I was not asked.
Q. No, I guess that was the last witness, whom I did not cross-examine. You never noticed any great improvement in the food value of the bread? A. No, sir.
Q. Or in the flavor? A. No.
Q. Or in the odor? A. No.
Q. How many horse-power do you use down there?
A. For what purpose?
Q. To make gas to bleach flour with.
A. I don't know exactly.
Q. About how many?

A. The machine drives with a five inch belt, so I presume about three horse-power.

Q. You think the size of the belt controls the horse-power?

A. I certainly do.

Q. What size pulley?

A. The pulley, I imagine, is eight inches in diameter.

Q. Suppose it was four inches and the same size belt, what would the horse-power be? A. It would be greater.

Q. Twice as great? A. If it did not slip, yes.

Q. So you have to take into account something besides the size of the belt, don't you? A. Yes, sir.

Q. Now, isn't that a five kilo watt machine, or five horse-power? A. Three and a half kilo watts machine.

2214 Q. And that is about five horse-power?

A. Yes, if it was rated to the maximum it would be.

Q. That is what you get to bleach flour. How many barrels of flour do you average a day when you bleach?

A. Three to four hundred.

Q. Of bleaching, how many do you make without bleaching?

A. From four hundred to five hundred—five hundred.

Q. You bleach very lightly, do you? A. Very lightly.

Q. How much nitrite do you put in the flour by your bleaching? A. I don't know.

Q. Did you ever have it tested? A. No.

Q. Well, you know this Griess test? A. Yes, sir.

Q. Well, you know before you put it in, that it won't give the test, and after it comes out it will, don't you?

Counsel for claimant objected.

Mr. Butler: I want to find out these facts.

The Court: He may answer.

A. I don't know how much gas we put through the pipes.

Q. You know this re-action they call the nitrite re-action, when you put the Griess test on the flour, you have seen that done, haven't you? A. Yes, sir.

Q. And you know that before you bleach it, it won't have it, don't you, and after you bleach it it will give re-action, you know that, don't you? A. Yes, sir.

Q. Now, did you never try to find out how much nitrite you were bleaching, putting in the flour? A. No.

Q. But you have found out it does some?

A. I have found it gives a pink color with the re-agent, that is all I know.

Q. That you understand to be nitrites, whether it is or not, you leave to others, that is a fact, isn't it?

A. I know it gives a pink color with the re-agent, that is all I know.

Q. Now, why don't you bleach it more and get it
2215 whiter; why do you bleach lightly?
A. It satisfies the trade apparently, as it is.
Q. Can you produce an order of any customer of flour for bleached flour? A. I do not handle the orders.
Q. Can you produce a sack that you ever labeled "bleached"?
A. I think I could.
Q. For sale in interstate commerce?
A. Yes, sir, I think I could.
Q. All right. Now, you label your flour sacks "bleached"?
A. Years ago it was necessary for Kansas trade to label them "bleached".
Q. It is yet, isn't it? A. Yes.
Q. In Kansas. Now, outside of a state where you were compelled to do it by law did you ever label a sack bleached for any trade unless you happened by mistake to get a car into Kansas that you had to reconsign, did you ever in your life mark it bleached unless you had to by law? A. No.
Q. Did you ever advertise it that you were bleaching, in the newspapers? A. No, sir.
Q. Or in any of the trade journals? A. No.
Q. You advertise your flour in the journals represented by this gentleman here, don't you? A. No.
Q. The Modern Miller, don't advertise at all?
A. It is in the Northwestern Miller.
Q. That is in Minnesota, published in Minneapolis by W. C. Edgar, isn't it? A. Yes, sir.
Q. Did you ever advertise in that paper that your flour was bleached? A. No, sir.
Q. Why not; it improves the looks of it, people want it; why don't you do it?

Counsel for claimant objected.

The Court: He may answer.

A. I don't know; I don't have the advertising contracts to let, and the reasons I don't know about.

Redirect Examination

By Judge Scarritt:
2216 Q. Did you advertise that you had unbleached flour?
A. We have written the trade to that effect.
Q. Do you ever advertise you had rollers in your mill?
A. No.
Q. Or bins in your mill? A. No.
Q. Or what kind of apparatus you had in your mill?
A. No.
Q. At any time, before or since bleaching? A. No.

Q. How much horse-power do you actually use, if you know? A. About 150 to 175 horse-power.

The Court: You mean that?

Judge Scarritt: I mean for your dynamo.

The Court: Electrifier, whatever it is called.

A. I think about two horse-power, probably, I don't know, it does not run to the maximum capacity.

Q. But you don't use the maximum power of the engine? A. No, sir.

Q. Which is possibly five horse-power. Now, Mr. Butler has asked you if in the majority of cases or usually water parts and radiator parts do not last indefinitely. You say that you have known them to last two or three years, and some of them longer. Now, would you say the same thing, as far as your knowledge goes, as to pipes in actual use in the bleaching of flour by the Alsop process?

A. My experience has been that they would last as long as pipes anywhere.

Q. As long as pipes anywhere. Then if there is any defect in the pipes in a mill it is either accidental or unusual, isn't it? A. Yes.

Q. As far as your knowledge goes?

Mr. Butler: I don't like to object to leading questions.

Judge Scarritt: Just got one more to ask.

Q. Now, this pipe that Mr. Butler has asked you about, this hose pipe, I will get you to state whether or not that was a second-hand pipe when you put it in there?

A. It was a piece of old fire hose that I got from the fire department.

Q. Had it been used in the fire department?

A. Yes, sir.

Q. Second-hand when you put it in there? A. Yes, sir.

Q. Now, he has asked you about the Kansas requirements. I will get you to state if the Nebraska law allows bleach-
2217 ing of flour? A. It does.

Q. Permits it? A. Permits it.

Q. Permits it by an act of the legislature?

Mr. Butler: I move to strike that out.

The Court: It will be stricken out.

Judge Scarritt: We object to its being stricken out. We offer to show by this witness—

The Court: Go on and show it, but I shall charge the jury that no state can control interstate business.

Judge Scarritt: No doubt about that.

Mr. Butler: The law speaks for itself.

The Court: Go on and answer; he may answer, but the state of Nebraska can no more allow anything if it is wrong and unlawful—I will commence back, that no state can control interstate commerce, by its legislation, any more than, as I said in my opinion, than the state of Louisiana could authorize the lottery business as interstate business. You may answer.

Judge Scarritt: We except to the remarks of the court.

Mr. Butler: I have no objection if it is considered to be admissible, that Judge Scarritt or the court or somebody reads the law of Nebraska.

The Court: I have to take judicial knowledge of what the law is.

Mr. Butler: But I object to a miller being called here to swear to the laws of another state.

The Court: Go on and answer, won't you please answer the question, and recite the Nebraska law?

A. I don't know the Nebraska law?

The Court: That is all, he don't know.

By Judge Scarritt:

Q. But you know the law does prevent the bleaching of flour? A. I do.

Q. By nitrogen peroxide.

By the Court:

Q. Is that what it says nitrogen peroxide; you know that the statute says nitrogen peroxide?

A. That is my belief.

2218 Q. What percentage? A. No.

Q. What horse-power? A. No.

Q. How many barrels per day with the horse power and the electrifier? A. No.

Q. You don't know anything about it.

Judge Scarritt: I have got a copy of it right here.

Mr. Butler: Do you admit that the Alsop bleaches with nitrogen peroxide?

Judge Scarritt: I do not admit anything. I am telling what the law is, and claim that it does permit it.

The Court: I am compelled to take judicial notice of it.

At this point court took a recess until 2 o'clock P. M.

Court met at 2 o'clock p. m., Wednesday, June 29, 1910, and proceeded further with the trial of said cause as follows:

R. G. Bullock, resuming the stand, was cross-examined further by Mr. Butler, and testified as follows:

Q. I call your attention to the pipes which you have here produced Ex. 271, a part of the pipe from the Alsop bleaching plant; Ex. 272, a part of the rubber and piping from the Alsop bleaching plant; and Ex. 273, the piece of steam pipe from the heating radiator. These exhibits have been more plainly marked than when you were examined, this morning, by pasting on these, pieces of paper, and marking the paper, but I think they are marked the same. I have correctly described each one, have I not? A. Yes, sir.

Q. I now hand you exhibit 272, and ask you to look at it. Tell me how far the iron pipe extends into the rubber?

A. Not over half an inch.

2219 Q. Has it been that way for three years?

A. It has.

Q. It is in the same condition that it was while in use for three years, at the bleacher? A. Exactly.

Q. I call your attention to the threads on the iron, next to the rubber, and ask you if you see some particles of substances in the threads? A. I do.

Q. Are they not pieces of rubber hose? A. They may be.

Mr. Butler: I call the jury's attention to what I refer to in the threads, just above the rubber.

Q. You observe, there in those threads, do you not, pieces of substance which you believe to be pieces of rubber hose?

Q. How did they get there?

A. That pipe had to be screwed onto the thread, because the pipe had to be stretched over it, and it is probable that they were chewed off in the process of screwing that on. It was a hard job to make a 2½ inch piece go over a 2-inch nipple.

Q. That occurred three years ago, then? A. Yes.

Q. This pipe is very hot, isn't it?

A. It feels hot to the hand.

Q. I do not mean melting hot. And your idea is these pieces of rubber were put into the threads, there, when you put it on, and that they remained there since?

A. If they are rubber, that is how it got there.

Q. How long was the hose, before you cut it?

A. About 15 inches.

Q. And you bring here about how many inches?

A. 8 or 9.

Q. Well, it is a good 9 isn't it? About 9½ is it not, according to this rule? A. Yes, sir.

Q. So, that leaves about 5½ that you cut off?
A. Yes, sir.
Q. When did you cut it off? A. The 11th day of June.
Q. The 11th day of June? A. Yes, sir; this year.
Q. Where is the piece that you cut off.
A. It was broken, in getting it off the electrifier, and has been burned up.
Q. Why was it burned up? A. It was no good.
2220 Q. Well, it would show, wouldn't it, the condition it was in?
A. It was not in as good condition as that. It was more brittle. It was nearer the machine.
Q. This is the piece fartherest away from the machine?
A. Yes.
Q. I call your attention to the end of the rubber—not the end that was cut off, but the other end, which is on this iron nipple, and ask you if it does not appear to be freshly cut, just like the end which you say was cut on the 11th of June?
A. I think not.
Q. Does the difference in appearance in these cuts indicate to you that any such period of time as three years had elapsed?
A. I don't think there is difference enough to indicate it, no.
Q. To the ordinary observer, they look the same, do they not, both freshly cut?
A. I don't know about the ordinary observer. They don't look the same to me.
Q. Have you noticed the rubbers brought in here by other millers? A. No, sir.
Q. That have been in use for times comparable somewhat with the use of this one? A. No, sir.
Q. You have not seen them? A. No, sir.
Q. Now, take exhibit 271. That was a pipe leading to the agitator, was it not? A. Yes, sir.
Q. And is a 2½ inch pipe? A. 2½ inch pipe.
Q. The pipe leading from the genrator was also 2½ inches?
A. Yes.
Q. The same size pipe?
A. The same size pipe.
Q. Was the other pipe, leading to the other agitator, the same size? A. The same size.
Q. Why is it that you have pipes here, so large, leading to your agitators?
A. The opening in the machine was that large.
Q. In what machine? A. The electrifier.
Q. Yes, I know: but when you divided up your main pipe—isn't it customary to reduce in size your "T"?

A. It would, if I was piping under pressure, but the pressure is so slight, the gas travels better, unimpeded.

2221 Q. Did you install the pipe? A. I did.

Q. And you didn't reduce at the "T"?

A. Didn't reduce anywhere.

Q. Was that for the purpose of avoiding accumulations in your pipe? A. Partly.

Q. Now, take this steam pipe. Did that ever have the Alsop bleaching gas pass through it? A. No.

Q. Sure? A. Sure.

Q. Now, that is the same size pipe, exactly, that was used, that is exhibit 14, is it not?

A. I don't know.

Q. Well, look at it and see.

A. It is an inch and a half pipe, I think it is.

Q. The same size pipe, exactly? A. Yes.

Q. Now, how did you get your gas into the agitator? Did you put it right in the open end of the pipe, into the agitator, or did you reduce it by a series things as there is in this pipe?

A. It goes in the full size of the pipe, into the top of the agitator.

Q. Just blow in the full blast? A. Yes.

Q. Why is it that you just brought in this piece, here, from the middle pipe? Why didn't you bring in the other?

A. The pipe was 20 feet long, and I brought the only part of it that had a hole in it.

Q. Why didn't you bring a piece nearer the end, so we could see the screws and fastenings, to see whether they remained sharp and clean, or corroded off?

A. It was the hole I wanted to introduce.

Q. You only wanted to introduce the hole? You didn't want to introduce the screw? (No response.)

Q. All right. So, you can't furnish us the other end of that rubber? A. I can't.

Q. Can you furnish us the other end of the pipe that that rubber went into?

A. No. That is fast to the machine,—a part of the electrifier.

Q. What is the capacity of your mill? A. 500 bbls.

Q. How much do you bleach a year?

A. I don't know how much we bleach.

2222 Q. Didn't you tell me, this morning?

A. I told you we bleached, running at normal capacity, about 3 to 4 hundred bbls. a day, when we bleached. Sometimes we don't bleach.

Q. How much do you make that you don't bleach?

A. We don't bleach our clear and low grades.

Q. How many barrels do you put out that are not bleached?
A. Sometimes we put out the whole product, unbleached.
Q. I mean, take it for a year, the average, how many barrels unbleached do you send out in a year, or per day, for the whole year?
A. Probably 15 to 20 per cent of our flour is unbleached.
Q. What horse-power do you use to grind with?
A. We have water-power, and approximately 150 to 175 horse-power.
Q. Water power, and it is the power of 150 to 175?
A. Somewhere about that. I don't know exactly. It is hard to measure water power.
Q. Do you grind corn, there?
A. Not in our flour mill, no. We have a corn mill.
Q. Your mill capacity is 500 bbls. a day of wheat flour?
A. Yes.
Q. And your average capacity is about how much?
A. Average for the year?
Q. Yes. A. I don't know exactly.
Q. The average output, instead of capacity, I mean.
A. The average output, I suppose we run more than 2/3rds of the time; full time, 2/3rds of that amount.
Q. Two-thirds of that amount? The corn is not ground in the same place? A. No.
Q. By the same water power?
A. It is a different power, in the same town.
Q. It is the same stream? A. Yes.
Q. But not the same place, at all? A. No.
Q. Your mill is larger than 200 bbls. a day capacity, is it?
A. It is.
Q. Who got you to take off these pipes?
A. Mr. Ed. P. Smith wanted that.
2223 Q. Was he there when they were taken off? A. No.
Q. What is that abrasion on the rubber that is in the nipple?
A. I think the stretching, putting it over the nipple, is what flattened it out. It was old fire hose, and flat when I got it.
Q. Now, look again at that—this place, here (indicating)?
A. I think that was from the old, original flattening. It was old fire hose.
Q. Do you not see some fresh abrasions on that pipe, right at the nipple?
A. Yes. That is where I took the hose clamp off.
Q. Why did you take the clamp off?
A. I wanted to use it. I put a new pipe on, and the machine is running today.
Q. What's that?
A. I put a new hose on, and the plant is running.

Q. You wanted to use the clamp for some other purpose?
A. For the same purpose.
Q. What are the old abrasions on there?
A. I don't know. Marks that were in it, I judge, when I got it.
Q. Can you smell anything, when you smell that hose, except the smell of rubber? Can you smell anything like your bleaching gas on it?
A. No. I think it smells like burned rubber.
Q. You are one of the contributors to the defense of this suit?
A. I don't know. I don't handle the financial end of the business.
Q. You were directed to come here by your employer?
A. Yes, sir.
Q. And you are not interested, of course, in this flour that was seized? A. Not at all.

Redirect Examination

By Mr. Scarritt:
Q. Mr. Bullock, how long have you lived in Nebraska?
A. 33 years.
Q. What business have you been in, while you were there?
A. Since I left school, I have been in the milling business.
Q. Ever since you left school? A. Yes, sir.
Q. The same place—Crete, Nebraska?
A. Nearly all the time.
2224 Q. Have you a family there? A. I have.
Q. Ever accused of anything dishonest, or ever been in the penitentiary, or anything of that kind? A. No.
Q. Now, who put this hose on this pipe in exhibit 272?
A. I did.
Q. When did you do it?
A. In 1907, sometime in the summer. I don't know the exact date.
Q. You got the hose, you have said—
A. (Interrupting) From the man who was repairing the fire hose for the city.
Q. Now, has that hose been on that pipe, in the same way, same place, ever since you put it on there, just exactly as it is now? A. Exactly as it is now.
Q. Did you ever, at any time, during those years, cut that hose near the pipe, where it is on the pipe, now? A. No.
Q. Did you, when you took it off the other day? A. No.
Q. Did you, when you put that hose on the pipe as it is now, put the clamp on the hose to hold it on the pipe, as indicated by those marks? A. I did.
Q. Did that clamp remain on that hose during those years, until you took it off the other day? A. It did.

Q. Did you ever take it off, before? A. No.

Q. Now, I understand, when you took it off, the reason you didn't bring that, was because you wanted to use it on the hose that you have just put on there to run your mill? A. Yes.

Q. It is necessary to have it on there, to hold the hose on there? A. Yes.

Q. So that pipe, which is half the hose section, so far as the pipe is concerned, it is in just exactly the same condition as it was when you put it on there, in 1907?

A. So far as composition, it is just exactly the same as it was.

Q. I understood you to say that you installed this mill, yourself. A. I did.

Q. Did you put these pipes up there, yourself?

2225 A. I was present all the time, and did some of the work.

Q. You were overseeing the work? A. Yes, sir.

Q. Taking care of the work, seeing that it was done, and did some of it, yourself? A. Yes.

Q. Now, you have told Mr. Butler that the balance of the hose which was 10 or 11 inches—

Mr. Butler: 5½.

By Mr. Scarritt:

Q. 5½ inches, was dried out? A. Yes.

Q. Was that next to the agitator, or furtherest away from the agitator? A. Furtherest away.

Q. I mean the electrifier.

A. It was next to the electrifier.

Q. And, next to the electrifier, is the warmest place in the pipes isn't it? A. Yes.

Q. And what was the condition of that 8 or 9 inches of pipe, as to brittleness?

A. It was dry and brittle, and broke when we took it off.

Q. Dry and brittle, like this (indicating)?

A. Yes, or possibly worse.

Q. Now, if you would take that off of there, is would break, wouldn't it? A. I am pretty certain it would.

Q. What made it dry and brittle, if you know.

A. The heat. Rubber tires, or belting, or rubber shoes, or anything deteriorates with age, and especially with heat.

Q. And becomes dry with heat, and brittle? A. Yes.

Q. Now, is the pipe marked Exhibit 271 a part of the pipe that you put up when this machine was installed? A. It is.

Q. Has it remained in the same position, and the same place, and the same way, ever since that time, until you took it down the other day? A. It is.

Q. Is the balance of the pipe that remains there in practically the same condition as that pipe, exhibit 271?

A. It is in good working order. I didn't take it down and examine the threads, but it seems to be as good as this.

2226 Q. You did not pick out any special part of it, with reference to its being good or bad, did you?

A. No. I took the easiest I could get.

Q. Now, Mr. Butler has asked you about bringing the balance of the pipe down here. You say it is in use? A. It is.

Q. But, if the Court or Jury desire to see the balance of the pipe, can you stop your mill and bring it down here?

A. It wouldn't be worth while.

Q. Or let them go and see it?

A. I would like to have them go and see it.

The Court: Well, we will not go, so there is no use spending time on that.

Mr. Scarritt: I just wanted to let you know that he was willing.

The Court: Those invitations are very kind, but they will not be accepted.

By Mr. Scarritt:

Q. Now, I understand you, in answer to Mr. Butler's question, to say that the pipe that has the hole in it, and is worn out by the action of the water, or whatever it is, never had any of this gas in it? A. No.

Q. Never was used for the purpose of conducting gas?

A. No.

Q. And you say to the jury that these pipes are exactly the same pipes that were put in there by you, and remained there ever since? A. Yes.

Q. Until you took them out the other day? A. Yes.

Q. You haven't tampered with them, or cleaned them?

A. Except to shake the dirt out of them. There was a lot of dust in this one.

Q. Or done anything to them, and brought them here, and showed them to the jury, as you have?

A. Just as they were.

Recross Examination

By Mr. Butler:

2227 Q. The piece of rubber that you didn't bring down here was the worst part of this piece of rubber, wasn't it?

A. Yes.

Q. So, you brought down the best part of the rubber?

A. I brought down the only part that was whole; the other part was broke.

Q. You brought down the best piece of rubber? A. Yes.

Q. And you brought down the worst piece of pipe from your heating plant that you could find? A. Yes.

Q. Your steam pipe from that heating apparatus?
A. Yes.
Q. So, in order that the jury might have the benefit of the fair observation of the pipe, you brought down the very best piece of your Alsop rubber, and the very worst piece of your heating plant?
A. To show that the pipe might be pitted through.
Q. Why didn't you bring down the poor rubber, instead of burning it up, if you wanted to let us see what effect your gas has upon rubber?
A. It would have packed badly. It wasn't convenient to pack. It was brittle. It would break all to pieces.
Q. What do you mean by packing?
A. It would have to be gotten down here.
Q. It wasn't any larger than a pair of cuffs, was it?
A. No.
Q. Then, why didn't you bring it down, instead of burning it up?
A. For the reason I have told you. I didn't think it was worth while.
Q. Well, it would show how the rubber was, next to your generator, wouldn't it? A. Yes.
Q. Show better than you could tell, wouldn't it? A. Yes.
Q. Now, wasn't it because it showed so badly, that you didn't bring that down?
A. It wasn't because it was decayed, or rotten, or anything of that sort. It was simply brittle, and broken.
Q. Simply because you couldn't pack it conveniently, was that the reason? A. That was the principal reason.
Q. Now, this room where this thing is, is dry and hot?
A. Yes.
Q. So, there is no condensation in the hose? A. No.
Q. Or in the pipe? A. No.
Q. Now, that's the truth, isn't it?
A. That's the truth.
2228 Q. Generate a great deal of heat at that place, don't you? A. Yes.
Q. A great deal of heat? Did you ever see pipe, such as that one (indicating) leading to an agitator, before?
A. I don't think I ever did.
Q. Was there any reason why you departed from the general Alsop custom, and used a big pipe, and just blew it in?
A. Because I had probably one of the first machines in the state. I have never seen one installed, and didn't know any better.
Q. It is a poor way of doing, isn't it?
A. No, I don't think so.
Q. Best way to do?

A. I have found it satisfactory, so I can't say that it is poor.

Witness excused.

Stella Agnes Hartzell, being called, sworn and examined on behalf of the claimants, testified as follows:

Direct Examination

By Mr. Elliott:

Q. Please give us your full name?

A. Stella Agnes Hartzell.

Q. Where do you reside? A. In Ames, Iowa.

Q. Will you state your education, and training, please?

A. I took my B. S. degree from the university of Nebraska, in 1901. For two years I taught in the high-school, and I then came back to the university, as assistant in chemistry.

Q. Lincoln?

A. At Lincoln, Nebraska. Later I was made instruc-
2229 tor in chemistry, in the university of Nebraska, and later I became instructor in agricultural chemistry in the university of Nebraska, and, still later, assistant chemist in the experiment station at the university of Nebraska. In the first of May, 1908, I accepted a position at Ames, Iowa, as assistant chemist in the experiment station, and last December, the head of the department left, and I have been acting head of the experiment station, the chemical section, since that time, and still hold that position.

Q. Have you carried on, during your connection with the experiment station, any investigations on the subjects of flours?

A. I have.

Q. What was the nature of those investigations?

A. First, I studied the composition of flours with Dr. Avery, chancellor of the state university, then I worked on the bleaching of flour, and, later, at the experiment station, I worked on the bread baking of the flours.

Q. What flours did you analyze, in connection with that investigation with Chancellor Avery?

A. I took a large amount of patent flour that was sent from—we obtained it under the direction of Chancellor Avery, who sent a man down to personally supervise obtaining the flour. We obtained both the bleached and the unbleached patent, from Manhattan, Kansas, then, we had another. There was another large amount that I worked on, that was sent from Silver Creek.

The Court: From where?

A. Silver Creek.

By Mr. Elliott:

Q. Where is that?

A. Silver Creek mills, in Nebraska, and that was a straight grade of flour, bleached and unbleached. I also worked on flours which were nine different sets of flours, including the three, patent, straight, and the baker's grade, sent from 9 mills in Nebraska.

Q. Were those nine sets that you speak of, sent by the millers?

A. They were sent to Doctor Alway, and I obtained the samples from him.

Q. But they were sent by the miller to the university?

2230 They were sent in by the millers? A. Yes, sir.

Q. What did you find, Miss Hartzell, in regard to the grading of flours, as expressed by the terms "patent", "straight", and "bakers"?

Mr. Butler: From those samples, you mean?

Mr. Elliott: Yes, samples that were sent in.

Mr. Butler: I will object to that, as immaterial and irrelevant, if those millers sent in some flour for their own purposes, and branded it as they pleased, and called it what they pleased, and bleached it as they pleased, unless there be some showing what the flour was, in fact.

The Court: Make it plain, Mr. Elliott. I don't understand.

Mr. Butler: You can't make any kind of evidence that way.

Mr. Elliott: I simply wanted to bring out from this witness that a certain grade of flour, of one mill—I won't mention any names—a certain flour of one miller might be better than a different grade of flour, or inferior.

The Court: You mean because it is a long or short patent?

Mr. Elliott: Things of that kind.

Mr. Butler: Is there any dispute about that?

Mr. Elliott: I don't know whether there is, or not.

The Court: I will hear the lady. I don't see that it will throw much light on the matter, but it may.

The Witness: From the analyses, the per cents of ash in some of the patent grades corresponded almost exactly with the—

Mr. Butler: (Interrupting) Wait a moment. I think I will object to that as irrelevant and immaterial, hearsay, and self-serving.

The Court: What per cents were these patents, do you know?

The Witness: You mean the per cent of ash?

The Court: Oh, no—per cent of the whole.

The Witness: I haven't figured out the exact per cent.

The Court: Could you tell? If I sent you a sack of flour, could you know what per cent it was?

2231 The Witness: I could determine the percentage of ash.

The Court: I am not talking about ash.

By Mr. Elliott:

Q. Did each one of these millers send in a sample of each grade of his flour? A. Yes.

Mr. Elliott: That was the point.

Mr. Butler: Now, that was manifestly hearsay testimony. They sent in some flour. Now, whether it was each grade, or blended, or mixed, or anything else, how can that be evidence?

The Court: I may misapprehend this whole situation. I don't see how this lady, or anybody else, can tell anything about what per cent of the whole any flour is. I may be mistaken. She was insistent in telling about the ash content, but I had another matter in my mind, but I will see if she can tell what percentage a flour is.

The Witness: Each miller sent in three samples of flour, one he labeled "patent", and one "straight grade" and one "bakers" grade.

The Court: Now then, of the per cent of each, you know nothing, and could not know anything.

Mr. Scarritt: Per cent of what?

The Court: Of the whole. Was it the long, or the short patent, or middle patent, or what.

The Witness: It was simply the three. That was the way he labeled it.

The Court: Was this a 50 per cent patent, or a 70 per cent patent, or a 95 per cent patent?

The Witness: He didn't state.

The Court: You don't know. You couldn't know, could you?

The Witness: No.

Mr. Elliott: I am not trying to bring that out.

Q. The question is what did you find in regard to the grade of the flours, as expressed by the terms "patent", "straight" and "bakers"?

Mr. Butler: We object to that as incompetent, irrelevant and immaterial.

2232 The Court: She may testify. I will see what that leads to.

The Witness: I found, from the results of my analyses, that a patent grade did not always show—

Mr. Butler: (Interrupting) Objected to as giving her conclusion.

Mr. Elliott: The Court said she could go on.

Mr. Butler: Let her tell what percentages she found.

The Court: Go on.

The Witness: I found, in the patent grade, I found the variation—

By Mr. Elliott:

Q. (Interrupting) Finish your answer, please, as you were giving it, and do not pay any attention to Mr. Butler, please, unless the Court tells you to.

Mr. Butler: Just a moment. I want to object to her conclusions, as to what the results indicated. I have no objection to the results.

The Court: This lady seems to have this question of ash on her mind. Let's get through with that question, and then get to something else.

The Witness: I found, from the results of the analysis, that a patent grade of flour was not always a higher grade of flour than a straight grade, according to the names that were sent in by the millers.

By Mr. Elliott:

Q. When was this work done?

A. Mostly during 1906 and 1907.

Q. What was the highest ash content which you found in any one of these patent flours? A. .49 per cent.

Q. And within what limits did the ash content vary?

Mr. Butler: In the patents?

By Mr. Elliott:

Q. In the patents, yes.

2233 A. The ones that I analyzed, were .36 per cent was the lowest, and .49 per cent was the highest.

Q. What work did you do on bleaching flour, anything besides making the chemical analyses?

A. I baked a large number of loaves of bread.

Q. Will you state what differences and similarities you found between the unbleached and the corresponding bleached flour?

Mr. Butler: What do you mean by "corresponding bleached flour"?

Mr. Elliott: Same flour bleached.

The Witness: You mean, in the bread?

By Mr. Elliott:

Q. No, in the flour, or, you may express it in terms of bread, if you will.

Mr. Butler: This artificially bleached you mean, Mr. Elliott?

Mr. Scarritt: Yes.

Mr. Butler: Bleached by her, you mean.

The Court: Bleached in the laboratory, or at the mills?

The Witness: These two samples that I am speaking of, were samples that were overseen, personally, by a man sent down by Chancellor Avery, and they were bleached, one was bleached and the other was not, at the Manhattan, Kansas, mill and the other was bleached at the Silver Creek mill.

Mr. Butler: Of course, that last that you gave is your information? You weren't at Manhattan? You didn't see it bleached at all?

The Witness: I didn't see it, but the man who saw it told me, personally, himself.

Mr. Butler: I move to strike out where it was bleached and how it was bleached, and what the man told her.

The Court: Yes, unless she tested, herself, and knows whether it was bleached or not.

The Witness: I tested it with the Griess test.

2234 By Mr. Elliott:

Q. And found what?

A. Found that one was unbleached, and the other was bleached, just as represented.

The Court: All right. Let it stand.

By Mr. Elliott:

Q. Now, were loaves of bread made from those flours?

A. Yes, sir.

Q. Will you state what differences and similarities, if any, you found between the unbleached and the corresponding bleached flour, after it was made into bread.

Mr. Butler: I object to "corresponding bleached flour".

The Court: Yes, let her state in each.

The Witness: In the case of the bleached flour, the bread was whiter than in the case of the bread from the unbleached flour. In the case of the odor, I could find no difference. The taste, I could find no difference, and the size of the loaf, I could find no more difference than there was between the size of the loaves of the same flours, when baked at the same time.

Q. Have you made many of these bakings, Miss Hartzell, in order to test the loaf volume? A. Yes, sir.

Q. And what is your opinion as to that, as result of all your tests in that regard?

A. I could find that there was no difference between them. Sometimes the bleached loaves would be a little larger than the other, in size, and sometimes the unbleached. The average was practically the same.

Q. Did you test all loaves made from bleached flour, for nitrites? A. Part of them I did.

Q. What was the result of those that you investigated in that regard?

A. In the way that I usually baked the bread, I did not find any nitrites present. In a few of the loaves that I tested, when I made them in a different way, I found some nitrites.

Q. Now, will you describe your method of bread making.

A. I dissolved half a cake of compressed yeast in one-fourth cup of warm water. Then added one-half cup of milk;
2235 one fourth cup of water, and stirred in about 1½ cups of flour, or enough to make a batter. I covered, and put in a warm place, to rise when it was light, I stirred in and mixed the flour—

The Court: Stirred in what?

The Witness: Stirred in the flour.

By Mr. Elliott:

Q. Some more flour?

A. And mixed it, and then kneaded until it would spring back in my hand, which was about 30 minutes, and then put it away until it became light; and, when light, I kneaded it into loaves, and oiled.

The Court: What?

The Witness: Oiled,—covered it with oil, slightly.

The Court: Oil?

The Witness: Yes.

The Court: What kind of oil?

The Witness: This was butter, simply the crust of it. And, when light, baked 45 minutes.

The Court: Gas, or wood stove, or coal stove, or electricity?

The Witness: The stove we used—used the gas burner.

By Mr. Elliott:

Q. Now, what was this other method you spoke of?

A. That was used in the experimenting, at the start, and this last that I had baked, I used this last method.

Q. Now, did you determine the amounts of nitrites present in the two samples of bleached flour you have referred to?

A. Yes, sir.

Q. What were they?

Mr. Butler: That is, from the Manhattan mill?

The Witness: Flour from the Manhattan mill, which was bleached, contained .8 parts per million, and the Silver Creek contained 12 parts per million.

2236 Mr. Butler: 12?

The Witness: Nitrite.

By Mr. Elliott:

Q. Is that reckoned as sodium nitrite? A. Yes.

Q. And, if you put that in terms of nitrogen as nitrite, you would divide that amount by 5, approximately, would you not?

A. I haven't figured that out.

Mr. Butler: That was 8 parts.

The Witness: .8.

Mr. Butler: And 12 whole parts?

The Witness: And the Silver Creek was 12.

By Mr. Elliott:

Q. And calculated as sodium nitrite? A. Yes.

Mr. Butler: 15 times as much in one as the other, I take it?

The Witness: Yes.

By Mr. Elliott:

Q. Did you ever compare any samples of bread made from bleached and unbleached flour, other than those you, yourself, made? A. Yes, sir.

Q. How many samples did you thus examine?

A. I don't know the number. They were arranged on the laboratory table, which is—

Q. (Interrupting) Where was this?

A. In the experiment station at Lincoln, and on the laboratory table, I think, which is probably 10 feet long. I have never measured it.

Q. You say you don't know the number of samples?

A. I didn't count the number; no.

Q. How did you happen to examine those loaves, Miss Hartzell?

A. Doctor Alway was working with them, and he asked me to come in and examine carefully the loaves for taste and odor and smell.

Mr. Elliott: I will produce Doctor Alway, if your Honor please.

2237 By Mr. Elliott:

Q. Now, did you detect differences in taste, and in odor, in respect to these loaves?

A. No, sir. I couldn't find any difference in the taste, or in the odor.

Q. Did you ever bake any bleached flours, besides those of which you have already spoken? A. Yes, sir.

Q. Where?

A. At the same station. I have baked some from some of the mills.

Q. What were the results of these bakings?

A. In what way?

Q. Did Doctor Alway ask you to make any bakings for him? Do you recall?

A. I was making bakings in the experiment station laboratory. I made a great many of them.

Mr. Butler: I will ask that to be stricken out, as not responsive.

By Mr. Elliott:

Q. I asked you if Doctor Alway requested you to make bakings.

Mr. Butler: May that go out, Mr. Elliott?

Mr. Elliott: That may go out.

A. Yes, sir. Doctor Alway asked me to take samples of the flours home and try them at home, and I took these samples home, and baked them into bread, and we used them on the table, at home.

Q. Now, speaking from your own observation, the flour that you took home,—were you able to find anything wrong with the odor or flavor of that bread? A. No, sir.

Q. Have you ever extracted the fat from bleached flour, and unbleached flour? A. Yes, sir.

Q. And have you ever compared the odor of those two flours? A. Yes, sir.

Q. Now, with what result.

A. I could find no difference in odor between the fats, which were extracted from the bleached and unbleached flours.

Q. Now, I will ask you, Miss Hartzell, as result of all of your experiments in connection with bleached flour, and the baking of bread, especially, what is your conclusion or
2238 your opinion as to the effect of bleaching upon the quality of the bread made from the resulting flour?

A. I could find no difference between the bleached and the unbleached, except that, of course, in the case of the bleached, the bleached flour bread was whiter.

Q. I believe you have taken a master's degree, you stated?

A. Yes.

Q. Under whom did you take that degree?

A. Under Doctor Avery.

Q. What was your thesis when you took your degree?

A. The effect of bleaching upon the composition of flour and bread.

Cross-Examination

By Mr. Butler:

Q. That was a master's degree in chemistry? A. Yes, sir.

Q. In these cases where you extracted the fat, and smelled of it, the bleached and unbleached flour samples, how much nitrites were in the flour?

A. I tried it with the Manhattan flour, and it had .8 parts per million, and I tried it with the Silver Creek, and it had 12 parts.

The Court: 12 full parts?

The Witness: Yes, 12 parts.

By Mr. Butler:

Q. Comparing the bleached Manhattan with the bleached Silver Creek, what was the color of the fat, one compared with the other, after it was extracted, or did you destroy the color in extracting it?

A. The color was lighter, in the fat from the bleached flours.

Q. I am comparing two bleached, now, the Manhattan and the Silver Creek, bleached, one bleached .8 parts per million, and the other bleached 12 parts per million, 15 times as hard. Did you compare them? Did you compare bleached against bleached, there? A. I don't remember that I did.

Q. Now, let me see if we can agree about some matters in chemistry. You are familiar with NO2? A. Yes, sir.

2239 Q. Is it about the color of this, in this bottle, exhibit 51? A. Yes, sir.

Q. Poisonous gas? A. Yes, sir.

Q. Suffocating, corrosive, offensive to taste? A. Yes, sir.

Q. And poison? A. Yes, sir.

Q. Are you familiar with the effect of that, when it comes into contact with water,—what takes place? Nitrous and nitric acid produced in equal molecular parts?

A. I have passed it into water, and that is what takes place.

Q. That is the result? A. Yes, sir.

Q. That is, this gas, with water, forms nitrous acid and nitric acid, doesn't it?

A. That is what we have always taken as the chemical reaction: Yes, sir.

Q. You believe that to be true, don't you? A. Yes, sir.

Q. Nitrous acid, combined with bases, organic or inorganic, forms nitrites, does it not? A. Yes, sir.

Q. Nitrites of various kinds, depending upon the character of the bases? A. Yes, sir.

Q. What's that? A. Yes, sir.

Q. Nitric acid, combining with various bases, forms nitrates?

A. Yes, sir.

Q. That's right, isn't it? A. Yes, sir.

Q. Nitrites are poisonous, are they not.

Mr. Elliott: I object to that, if your Honor please. This lady hasn't qualified as a toxicologist.

The Court: She may answer.

A. I haven't studied any poisons.

By Mr. Butler:

Q. But, generally speaking, you know, do you not, at least as much as ordinary people do, about the calling of various substances poison, or don't you?

Mr. Elliott: I make the same objection, if your Honor please.

The Court: She may answer.

2240 The Witness: I have not studied it, and I prefer not to—

By Mr. Butler:

Q. (Interrupting) Do you know nitric acid is poison?

Mr. Elliott: Same objection.

The Court: She may answer.

The Witness: I haven't studied, or tried it on myself, either.

By Mr. Butler:

Q. Do you know nitric acid is a poison?

A. Nitric acid is said to be a poison.

Q. Popularly known as a poison, at least, isn't it?

A. Yes, sir.

Q. So is nitrous acid?

A. Popularly known to be a poison; I think it is classified in that list.

Q. And the organic nitrites are generally understood to be poisonous in character? A. Not necessarily the nitrite.

Q. How about nitrates?

A. Not necessarily the nitrates.

Q. Not necessarily? Now, let us get the rule, then. Some nitrites poison? A. I haven't studied that.

Q. Then why did you say they were not necessarily poisonous, if you haven't studied it? Now, you can't answer against our contention, and then, when we ask you to answer something for us, say you haven't studied. That would not be fair. Now, you say not necessarily poisonous. If you haven't studied it, you should have answered that.

A. I haven't studied, and I—

Q. (Interrupting) Do you want to withdraw that answer, then?

A. What salts are poison, I mean, I haven't studied poisons, as a study.

Q. Would you like to withdraw your statement, that nitrites are not necessarily poisonous, or are you willing to be cross-examined to defend that statement? Now, you may do whichever you please. If you say you are not qualified on that subject, you may withdraw your answer, and I will not press the inquiry.

A. When I spoke, I was thinking that—I was sure that some of the nitrites were necessarily poisonous; but I will
2241 withdraw it.

Q. Very good. We will drop it, then. Now, do you know of any reason in the world why NO2, when it comes in contact with water, will not always form nitric acid?

A. When it comes in contact with water?

Q. Yes. A. It forms both nitrous and nitric.

Q. Always, doesn't it? A. Yes, sir.

Q. Just as certainly as that fan will fall, when I let go of it? A. According to the chemical rules.

Q. Do you know anything about N2O3?

A. I know there is a compound N2O3.

Q. Bluish liquid?

The Court: Is it a liquid, or gas?

The Witness: It depends upon the temperature, and the pressure.

By Mr. Butler:

Q. Isn't it laid down by the best chemical authorities in the world, that it doesn't exist, only as a liquid, and that it is a mistake to say that NO2 plus NO is a compound, at all? That it is always a mixture? Isn't that the chemistry of that?

A. I didn't understand.

Q. Isn't that the chemistry of the situation? Hasn't it been well established by well-known authorities, the greatest gas men in the world, that NO2 and NO is a mixture, and not a compound, and that by passing it through caustic soda, you get nitrites and nitrates, and NO cuts off free, which shows it is a mixture, and not a compound?

A. As a rule, when nitric acid decomposes, you have those separated.

Q. Well, I am not speaking of nitric acid.

A. Well, you have NO2 formed, and NO.

Q. Well, hasn't it been very well established about that, that in case of complete chemical union of two parts equal in volume, the volume of the compound will be the same as that of each? We will call that (indicating) NO2, and this (indicating) NO. Or do you know about that? Do you know
2242 that, as a matter of chemistry, if you combine equal volume of NO2 and NO, that the mixture will be as large as both? A. I have studied some of that.

Q. Now, you know, if there is chemical combination, and it is complete, that the mixture will only be as large as one, don't you?

A. That it combines under the same conditions of temperature, and pressure, according to the different portions.

Q. Combines only the size of each part, then, isn't that all? Whereas, if it is mixture, it is larger? Isn't that the law? Isn't that well-known? Or don't you know anything about that?

A. Well, that depends upon—you are taking into consideration the volumes?

Q. That is what I am speaking of. A. Yes, the volumes.

Q. This volume represents NO, this NO2. If they combine completely, it is just the same size as one?

A. If you take one volume of hydrogen, and one of chlorine, you would get only one volume of hydrochloric acid.

Q. That is the same with NO and NO2, isn't it?

A. Same principle; yes.

Q. Same principle, exactly? But, when you put the oxygen and nitrogen in the air, they do not combine, do they?

A. No, sir.

Q. They are a mixture? A. Yes, sir.

Q. And the volume of both remains? A. Yes, sir.

Q. Well, now, don't you know that it is well understood that, when NO and NO2 come together, the volume of both remains? Don't you know that is well understood by chemists, whereas, if it was a compound, the compound would only be the size of one? Are you familiar with that, Miss Hartzell?

A. You say that, if you bring a volume of NO2 to a volume of NO, together, that you still have the volume of NO2 and still the volume of NO?

Q. Yes. That is well understood, isn't it?

A. I think so.

Q. That shows they are not a compound, don't it, because, if they were a compound, you would only have the volume of one?

A. Shows what?

Q. Shows that it is a mixture, instead of a compound?

A. You mean the NO and the NO2?

2243 Q: Yes. That is a mixture, isn't it, and not a compound? A. I suppose so.

Q. Well, I mean, a mixture of NO and NO2. You may call each a compound, but it is a mixture of these two substances? A. Yes, sir.

Q. Now, let us speak of the bread. What was the ash in your straight flour, about which Mr. Elliott asked you what the range was? A. That was the patent.

Q. Yes, and you told him .36 and .49, minimum and maximum. Now, I would like to get the minimum and maximum in the straight.

A. I didn't bring my figures with me. I don't remember.

Q. Well, give it, approximately. I will not ask you to be accurate. I don't care very much, but was it higher or lower than the patent?

A. It was higher than the patent. It was, taking the average, higher than the patent.

Q. And of your clear?

A. That was still higher than the average of the straight.

Q. What was the lowest of your clear?

A. I didn't bring my figures with me.

Q. Well, I will remind you in this case, or tell you that the flour in this case had .57 ash. You found clears lower than that, didn't you? A. Yes, sir.

Q. So that this flour that is seized, so far as the ash is concerned, has more ash than some of the clears you found?

A. I remember one that was .6 of the baker's. .6 per-cent.

Q. Was that the lowest? A. I can't state, positively.

Q. And did you bring your patent figures? A. Yes, sir.

Q. Why didn't you bring the others, too?

A. Because I was asked to bring simply the patent.

Q. Who asked that? A. Doctor Alway.

Q. Did he say simply the patent?

A. No. He didn't. He didn't specify, except that he said he would like to have me bring the patent.

2244 Q. Did you make these ash determinations for Doctor Alway? A. No, sir.

Q. When were these made?

A. These were made in 1906.

Q. When were these baking tests made?

A. In the summer and fall of 1907.

Q. And the tasting tests made? A. And the what?

Q. Tasting tests on that whole row of bread that you tasted, —on the ten-foot table, I understood.

A. I can't state definitely whether that was the spring of 1908 or the fall of 1907.

Redirect Examination

By Mr. Elliott:

Q. Doctor Alway didn't tell you not to bring any ash determinations?

A. No. He simply asked me to bring the patent, and I didn't know you wished any others.

Witness Excused.

The Court: The Court desires, at this time to remind counsel of the direction before we entered upon this trial, as to the number of witnesses that would be allowed upon given questions.

Mr. Butler: There have been 20 millers or more called by the defense.

The Court: I have told counsel on both sides, before this trial began, the number of witnesses, scientists and others

which would be called upon given questions, and I simply desire to call the attention of counsel, now, to what was said, and I think a record will be necessary, if counsel do not recall what was said in my room. Call your next witness.

Mr. Scarritt: I don't recall, your Honor.

The Court: I do.

2245 Mr. Scarritt: You limited the number of witnesses?

The Court: Yes, sir.

Mr. Scarritt: That was spoken of, but no understanding that I know of.

The Court: Very well. Counsel will recollect. Not only that, but the general, uniform law all over the United States, so far as I am familiar with courts.

Frederick James Alway was then called to the witness stand and sworn as a witness on behalf of the claimants.

The Court: On what subject is this witness called?

Mr. Elliott: He is a chemist.

The Court: Well, keep in mind what I said a moment ago.

Mr. Elliott: If your Honor please, I hadn't heard of that, before?

The Court: I stated distinctly to you gentlemen, on both sides, that the uniform rule prevailing in the Courts all over the country, would be enforced in this case, to-wit, from 5 to 7 witnesses upon a given subject, or a given line, and so on. This case would run into a question of who can call the most witnesses. Now then, you gentlemen know how many scientists you have called. You are taking your chances, now, on every one you call, unless you call those you prefer above others, likewise millers, and upon other subjects.

Mr. Scarritt: How many have we had?

The Court: I haven't checked up. I am going to have it checked up this evening. This case is going to come to an end, if my health will hold out for a very short time.

Recess was then taken for five minutes, after which

Frederick James Alway having been called and sworn
2246 as a witness on behalf of claimants, was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. State your full name, please?

A. Frederick James Alway.

Q. Where do you reside? A. Lincoln, Nebraska.

Q. What is your profession or occupation?

A. I am a chemist.

Q. And what is your present occupation?

A. I am chemist of the Nebraska experiment station, and professor of agricultural chemistry in the University of Nebraska.

Q. What have been your education and experience?

A. I attended the University of Toronto, in Canada, where I obtained the degree of Bachelor of Arts, in '94. Then I went to the University of Heidleberg, in Germany, where I obtained the degree of Doctor of Philosophy in 1897. From 1896 to 1906, I was professor of chemistry in the Nebraska Wesleyan university, and from 1906 on, I have been at the University of Nebraska, as chemist at the experiment station, and professor of agricultural chemistry.

Q. Are you a member of any of these scientific societies?

A. I am a member of the American Chemical society, and the German chemical society.

Q. Have you done any research work, and issued any publications along the lines of chemistry?

A. I have been carrying on investigations for the past ten years or more, and published a large number of articles in American and German medical magazines.

Q. Are you an organic chemist?

A. When I was in the Nebraska Wesleyan university, I worked chiefly on organic chemistry. Since that time I have not worked on that subject.

Q. Will you define what organic chemistry is?

A. Organic chemistry is that branch of chemistry which deals with the compounds of carbon and hydrogen, as distinguished from the limited number of compounds which contain neither.

2247 Q. I wish you would distinguish between the compounds which are called "organic", and those which are not called "organic".

A. Those that contain both carbon and hydrogen are regarded as organic compounds. Those that do not, are considered as inorganic compounds.

Q. Now, what part of organic chemistry have you worked with, chiefly?

A. In my investigations, I have confined myself chiefly to nitro compounds, nitroso compounds, diazo compounds, and related compounds.

Q. Have you ever discovered any of the compounds?

A. In speaking of preparing new compounds, we do not use the term "discover". We say "prepare".

Q. Have you prepared any compounds?

A. I have prepared a considerable number of compounds which were unknown, before. How many, I don't know. One hundred, or thereabouts.

Q. Are you familiar with nitric acid? A. I am.

Q. How does nitric acid act upon organic compounds?

A. That depends entirely upon the conditions, upon concentration, temperature, and other conditions.

Q. Would you please explain just what you mean by "depending upon the concentration of the nitric acid?

A. That means how much water is mixed with it. Nitric acid, when pure, would have 100 per cent of nitric acid, without water, and it might be diluted indefinitely down to a minute fraction of one per cent.

Q. Now, I understood one of the Government chemists to state that dilute nitric acid acts upon benzin, even when the nitric acid is extremely dilute. My recollection is he said even down to a molecule, but, at any rate, extremely dilute, and he referred to Beilstein as an authority. I would like to ask your opinion as to this?

Objected to for the reason it is incompetent, irrelevant and immaterial.

Question withdrawn.

Q. Did your answer apply to the general proposition
2248 of formation? A. The general proposition.

Q. What is your opinion as to the possibility of the formation of nitro compounds by dilute nitric acid?

A. Well, the point at which they will not form will depend upon the compound that is being treated, and upon the dilution of the nitric acid. It will depend entirely upon the nature of the compound that is being treated with the nitric acid, and upon the concentration of the nitric acid. I could give an example, to illustrate that, if you wish?

Q. Well, you may give an example.

A. When benzin is treated with concentrated nitric acid, it gives—

Mr. Butler: (Interrupting) Just wait a moment. We object to that as the witness' method of putting in excluded evidence, and a volunteer answer. The question was withdrawn about the benzin, by counsel.

Mr. Elliott: Because it referred to specific testimony. Now, I am asking him to give an illustration of it.

The Court: Go on, and give it with reference to bleached flour. I don't see that these general lectures upon subjects of chemistry, foreign to these matters, can be of much use in this case.

By Mr. Elliott:

Q. You can proceed with your illustration, the Court says.

A. Dilute nitric acid, under 20 per cent, forms no nitro benzin. Forms no nitro compound with benzin.

Mr. Butler: I move to strike out the testimony relating to benzin, as not in any way touching any issue of the trial, here.

The Court: Motion is sustained.

Mr. Scarritt: To which we except.

By Mr. Elliott:

Q. Assuming that the nitrogen peroxide acts upon the moisture in the flour, to form nitric acid, and nitrous acid, what would be the concentration of the nitric acid that would be produced from the gas of the Alsop process, as in-

2249 dicated by this flour that was seized in this suit?

A. Applying the investigations I made previously, I would say about 1-80th of one per cent of nitric acid.

Q. Do you know, Doctor Alway, of any nitro compound produced by the action of nitric acid of such concentration, acting upon organic compounds? A. I do not.

Q. I will ask you if, in your opinion, any nitro compounds would be formed by the action of nitric acid of this strength upon flour? A. I do not think so.

Q. What is meant by "dilute nitric acid", where the term is used in reference to the preparation of organic compounds?

A. Oh, from 25 per cent down,—25 to 15, possibly 12.

Q. In speaking of the preparation of nitro compounds by the action of nitric acid, would 15 per cent nitric acid be considered dilute?

A. Very dilute, under those circumstances.

Q. What is the color, Doctor Alway, of the nitro compounds, in general? A. Yellow.

Q. When the gaseous mixture which does the bleaching comes into contact with the flour, what chemical changes are produced in the flour?

A. The coloring matter is changed in some manner so that it disappears, and we find nitrite reacting material in the flour.

Q. I will ask you, Doctor Alway, if, in your judgment, nitric acid is formed by the action of the gas of the Alsop machine, on flour?

A. I have always assumed it is.

Q. Do you know whether any nitrates are left in the flour after the treatment with the gas?

A. I do not . I have investigated that at great length, in the hope of identifying—

Mr. Butler: (Interrupting) I move to strike out his hopes, as irrelevant and immaterial.

The Court: The answer may stand.

By Mr. Elliott:

Q. Leave out your hopes.

A. But I have never succeeded in isolating it, or proving that they were there, but I have always assumed that they are there.

2250

Q. Do you know whether there is any nitric acid left in the flour from the bleaching process?

A. So far as my investigations have gone, nitric acid,—free nitric acid is absent in the flour, after it has been bleached.

Q. Is your opinion based upon experimental fact, or not?

A. It is based upon experimental fact.

Q. Describe what experiments you have made showing this.

A. I have taken flour,—some of the flour in question here that has been seized, extracted it with water, and tested that watery extract with an indicator which would reveal the presence of free mineral acid,—strong—such as nitric acid, sulpuric acid, and hydrochloric acid—and the indicator showed the absence of any free, strong acid, and not only was no acid indicated by this indicator, but it was necessary, in order to get any evidence of free mineral acid, to add still more acid. I used two indicators, one, dimethyl-amido-azo-benzol, and one called Troopper's reagent, which, when mixed with water, gives this color.

Mr. Elliott: (Referring to a bottle) Let us label this as an exhibit.

Marked by the Reporter Claimant's Exhibt 274.

The Court: What color do you call that?

The Witness: A light yellow.

By Mr. Elliott:

Q. Now, just state what claimant's exhibit 274 is?

A. This is one drop of the reagent solution.

The Court: The Griess reagent?

The Witness: Dissolving one drop of dimethyl-amido-azo-benzol in 200 grams of alcohol, and I placed one drop of that reagent in here with 100 c.c. of distilled water. Here is the same thing, to which I have added one cubic centimeter of decinormal acid, which is creating this coloration. That is evidence of free mineral acid being present.

Mr. Butler: How much nitric acid?

The Witness: One cubic centimeter of decinormal—
2251 one-tenth, and 6.3 grams in 1,000 cubic centimeters. Claimants exhibit 276 is an extract from 10 grams of flour. 25 grams of flour were treated with 250 c.c. water, and allowed to stand for an hour, filtered, and 100 c.c., and here we have the extract from 10 grams of flour.

Mr. Butler: What flour?

The Witness: The flour in question.

By Mr. Elliott:

Q. That is just an extract from flour? A. Yes.

Q. Now, tell me what exhibit 277 is.

A. Exhibit 277 contains the same amount of the reagent and of nitric acid as there is in 275, but to it I have added the same amount of extract as is contained in 276, the extract from ten grams of flour. The color, which would indicate the presence of free nitric acid, disappeared on adding the flour extract, showing that no free nitric acid is present in that extract, and, accordingly, not in the flour.

Q. Now, as I pass these to the jury, I want you to tell again what they are. This one?

A. That is one drop of Troepper's solution in 100 cubic centimeters of water.

Q. Purports to indicate the presence of nitric acid and free mineral acid? A. Yes.

Mr. Butler: That is, free nitric acid—nitric acid as such?

The Witness: Yes, sir.

By Mr. Elliott:

Q. Now, exhibit 275 is what?

A. The same as the preceding exhibit, 274, with 1 cubic centimeter of decinormal nitric acid added to it.

Q. Now, exhibit 276 is what?

A. The extract, in water, from 10 grams of the bleached flour in question.

Mr. Butler: May I ask, Mr. Elliott, what water was this? What kind of water?

2252 The Witness: Distilled water.

Mr. Butler: How much?

The Witness: 100 cubic centimeters.

Mr. Butler: In each instance?

The Witness: Yes.

By Mr. Elliott:

Q. Exhibit 277 is what?

A. It is the same as exhibit 275, to which has been added 276, except the 100 cubic centimeters of distilled water was kept out.

Q. Well, we cannot follow these numbers. Just tell me.

A. It is one drop of Troepper's reagent, to which was added one cubic centimeter tense normal nitric acid, and then to that was added the extract from ten grams of flour, in 100 cubic centimeters of distilled water.

Q. Now, as I understand this exhibit, it does not show the reaction?

A. Gives no indication of the presence of free mineral acid,—free nitric acid.

Mr. Butler: In the flour?

The Witness: In the extract in the flour.

By Mr. Elliott:

Q. Have you tried spraying unbleached flour with nitric acid? A. I have.

Q. You may state what you did, and what you found?

A. May I refer to my notes?

Q. Yes.

A. On June 18, I carried out 8 experiments with 500 gram portions of flour in each case. The flour was placed in a large flask,—three-liter flask,—and, while it was being vigorously shaken, nitric acid, or water, or a mixture of the two, was introduced from an atomizer made of hardened rubber, introduced slowly, the flour being violently shaken. As soon as the shaking was over, which lasted about two minutes, the flour was transferred to a large beaker, and a thermometer placed in the beaker, down about the center of the flour.

2253 The temperature invariably rose, and the themometer was left there, and watched, until the temperature stopped rising. Then the flour was tested with the Griess solution for nitrites, or nitrite reacting material, and the next day,—after 18 to 36 hours,—36 hours in one case, it was tested again with the Griess solution, and on that occasion it was compared for color in the ordinary method of slicking it, and comparing with the original unbleached flour.

Q. With what result?

A. In no case did I find any bleaching effect. In no case did I find—in no case except one did I find any evidence of nitrites, and in that one it was only nitrites far too small to measure, and I would not be positive it was evidence of nitrites. In all cases there was a rise of temperature. The

thermometer rose, on June 18th,—varied from 1½—from 1 to 2 degrees centigrade. I repeated a similiar series of experiments, on June 25, using the different flour. In all cases I used 500 grams; in each case, at the rate of 40 cubic centimeters of distilled water per kilogram of flour. The rise of temperature was 2.8 degrees centigrade, and then I used 20 cubic centimeters tense normal nitric acid, without any water being added to this dilute nitric acid. The rise in temperature was 3.3 degrees centigrade. The third experiment, 6 cubic centimeters, 2 per cent dilute nitric acid, without further dilution, the rise in temperature was 1.3, and the fourth experiment, 6 cubic centimeters 4 per cent nitric acid, without further dilution, and the rise in temperature was 1.3 again; and in no case did I find nitrites immediately after treating or on the following day; and, after standing 36 hours, I found no evidence of bleaching, in comparing with the original sample.

Q. Could you detect any fumes of nitrogen peroxide at the time of spraying? A. I could not.

Q. Have you sprayed flour with water, alone?

A. Three of the experiments which I just gave.

Q. You referred to those? A. Yes.

Q. You sprayed flour with water alone, did you?

A. In four experiments I sprayed with water alone—

2254 distilled water.

Q. You got a rise in temperature? A. Yes, sir.

Mr. Butler: But no nitrites?

The Witness: No nitrites.

By Mr. Elliott:

Q. I will ask you if, in your judgment a rise of temperature is a proof of chemical action?

A. It is not a proof of chemical action.

Q. Have you ever seen some experiments tried with other substances.

A. Yes. I have seen them tried with soil—on the bog soil, when it is moistened with distilled water.

Mr. Butler: I will object to soils.

The Court: I don't know what that has got to do with this. Go on with this witness, please.

The Witness: When a bog soil is—

Mr. Butler: (Interrupting) I am going to object to experiments on bog soil.

The Court: Objection sustained.

By Mr. Elliott:

Q. Is there a name, Doctor Alway, that is given to this rise in Temperature without chemical action?

A. In the case of soils there is a term in use, in Germany, during the past few years, but I don't know whether we have an equivalent for it in the English language, or not. It is "benetzungswarme" in German.

Q. Have you examined any considerable number of commercially bleached flours?

A. I have examined a large number.

Q. Have you examined them, as to increase in acidity?

A. I tested them all for increase in acidity, having samples of the corresponding bleached flours.

Q. What have you found, as a result of your investigations, as to whether there is any increase in the acidity of flour,—of flour that has been commercially bleached?

A. No increase in the acidity in the case of commercially bleached flours that I have examined.

2255 Q. Have you ever extracted the fat from bleached flours, and examined its odor, to see if there was any rancidity, and with what result? What did you conclude?

A. That there was no increase in the rancidity of the odor. No change that I could detect in the odor, caused by the bleaching.

Q. What is your conclusion, Doctor Alway, if any, from the results of your experiments showing there is no increase in the acidity of flour?

A. I don't know just what you mean by that. It is rather comprehensive.

Q. You have testified you made experiments showing that there was no increase in the acidity of bleached flours?

A. Yes.

Q. Now, as dealing with any of the compounds in flour, or acids, and the like, did you come to any conclusion with respect to flour?

A. I came to the conclusion that there had been no hydrolysis; that is to say, no breaking up of the fats in the flour into glycerin and forming oleic, palmitic and stearic, and no oxidation of the oleic acid to the acids of simpler form, such as those that occur in the butter from cow's milk.

Q. What do you say as to whether the nitric acid, which is assumed to be present in the bleached flour, would act on the starch?

A. The nitric acid, in the form of salts, would have no action, whatever, and nitric acid, in the concentration which we would have it in the bleached flours, would have no action on the starch, unless it were possible to break it up into sugar.

Q. What would you say as to the possibility, assuming that nitric acid in this concentration you have indicated is present in bleached flour,—what would you say as to the possibility of its acting upon the starch, to form nitro starch, which could then act upon the gluten?

A. I would not care to say as to the possibility, because we can never predict that; but I would say there was no probability, at all, of its acting upon the flour to form nitro starch.

Q. That is, nitric acid?

A. Nitric acid of that concentration.

Q. Will you explain why you think that?

A. The nitro starches are comparatively well known
2256 but they are all those that are known by the action of strong nitric acid and fuming sulphuric acid of Nordhausen—concentrated nitric acid and concentrated sulphuric acid on starch.

Q. Now, in the light of your last statement, I will ask you if you consider it in the least probable that any nitro starch could be formed in the flour, or in the bread? A. I do not.

Q. Will you tell us what amino compounds are, Doctor Alway?

A. Amino compounds are those containing nitrogen and hydrogen, the hydrogen uniting to the nitrogen, and the nitrogen united with the carbon. It is pretty hard to explain that, without using the blackboard.

Q. Well, we will accept your general statement, I believe. Tell us what these amino compounds are, again. I did not hear your answer.

A. The amino compounds are compounds of carbon, nitrogen and hydrogen, in which the hydrogen—some of the hydrogen is united to the nitrogen, and the nitrogen to the carbon. When we write their formula, we always show, at one side, NH2.

Q. Now, if you want to illustrate that, you may use this pad (handing the witness a pad).

A. This would be an amino compound, NH2, joined onto the C, or carbon, whatever else we might have attached to the carbon, and as soon as we add the NH2, attached to it, we would have an amino compound, sometimes called amido.

Q. Doctor, do the lower acids, when treated with nitric acid, form nitroso and diazo compounds?

A. They do not.

Q. What is meant by the "aromatic amino group"?

A. The aromatic amino group is one in which the amino group is attached to a carbon atom—that is, one on a ring. Usually this carbon atom, being arranged in a ring and the ilovitic (?) which imparts the other carbon atom, so the carbon atoms are joined up in chains.

Q. Now, do any of the amino acids obtained from flour and other food stuffs have the aromatic amino group?

A. None of them do.

Q. I will ask you, what relation does that statement have, if any, to the formation of these compounds, diazo and nitroso compounds?

A. Where we have the aromatic amino group, nitrous acid form diazo compounds, and the diazo compounds are
2257 sometimes looked upon as rearranging themselves into nitroso compounds, but never change in formula; simply a change in properties, and the change in formula, we write it out on a large scale.

Q. Does that mean that if this aromatic amino group is not in any of these food stuffs, you could not have a diazo compound?

Q. You wouldn't get it from the amino acids.

Q. From the amino acids? Will nitrous acid, then if present, act upon amino acids?

A. Very readily, I would except; in ordinary concentrations it acts with extreme readiness upon the amino group.

Q. Now, assuming it possible that nitric acid were present in bleached flour; and further assuming it were able to change some of the gluten into amino acids, as I understood it to be testified here, and assuming there were nitrous acid present in sufficient concentration to act upon the amino acids, tell us what you would [except] to take place?

A. I would expect the amino acids to change over into oxy acids. Below here (indicating), I have written HONO, nitrous acid. When the amino is brought in contact with the free nitrous acid, this hydrogen and oxygen would unite to form water; the nitrogen from the amino compounds and the nitrite nitrogen would unite to form nitrogen gas, escaping into the air, and we would have OH more in place of the amino and NH2 group.

Q. Now, I will ask you, Prof. Alway, what is the action of nitrous acid upon gluten, and upon other proteins?

A. When nitrous acid, in sufficient concentration, or concentrations that we ordinarily employ, is brought in contact with gluten, nitrogen escapes into the air, and it is assumed that the amino groups in the gluten are changed into oxy groups —oxy, or hydroxy groups.

Q. Did you make any baking experiments with this flour that has been seized?

A. I had a baker bake it for me in his own oven, along with his commercial product.

Q. Did you test that bread for nitrites?

A. I tested that. I took both bleached—

2258 The Court: (Interrupting) He asked if you tested it. Yes or no?

The Witness: Yes, I did.

By Mr. Elliott:

Q. What did you find? A. No nitrites.

Q. I will ask you, Doctor Alway, if you have tested, made ash determinations out of sacks of flour that was seized in this case? A. I have.

Q. What have you found?

A. In one I found .62. In one I found .45. In another .53. In each of two others, .50, and in still another, which I did not get in the form of a sack, but was given me by a man who had received it in that form, I found .45.

Mr. Butler: What man?

The Witness: Sent me by Prof. Snyder, from St. Paul.

By Mr. Elliott:

Q. Did you make a determination of the ash of different streams from the Lexington mill?

Mr. Butler: When?

By Mr. Elliott:

Q. Just answer the question. A. I did.

Q. When did you do that?

A. Sometime since the first of June.

Q. And what did you find?

Mr. Butler: Objected to as irrelevant and immaterial, and no foundation laid. The Lexington mill can't fix up streams, and tell us nothing about them, and ask Prof. Alway what he found in the streams while the law-suit is going on.

The Court: He may answer.

A. I made eleven analyses. I found, from the second break, .53; the third break, .64; coarse sizing, .43; fine sizing, .40; No. 1 tailings, .80; No. 1 middlings, .48; No. 2 middlings, .46; No. 3 middlings, .37; No. 4 middlings, .40; No. 5 middlings, .55; No. 6 middlings, 50.

2259 Cross-Examination

By Mr. Butler:

Q. You are strongly in favor of employing NO2 to bleach flour, are you not? A. I am not.

Q. Sir? A. I am not strongly in favor of employing NO2.

Q. Haven't you said that it must be,—"if bleaching be permitted at all, it must be confined to NO2; that it must either be prohibited, or NO2 alone allowed?"

A. I made a statement, that came to that with a long modifying explanation.

Q. Well, we will get into that later. You have been conducting the scientific end of the defense in this case, haven't you? A. I have not.

Q. You have been aiding in it?

A. I was sent here by the university regents, as an advisor, in case I were needed.

Q. Would you advise the law makers of the state of Nebraska, and the Board of Regents of the University of Nebraska, that you do know that NO2 is a harmless bleaching agent, and ought to be employed to bleach flour?

A. Read the question, please.

(Last question read by the reporter.)

A. I would not offer any advice that way, especially without any more modifying conditions than that; unless I was permitted to give a modification.

Mr. Butler: I move to strike out the answer.

The Court: The answer is stricken out.

The Witness: Will you read the question?

(Last question read again by the reporter.)

A. I would not advise them that I know.

Q. You do not know, then?

A. I am not a toxicologist or a physiological chemist.

Q. Isn't it through your influence, and advice, and direction, that that state has put in the statutes, that NO2 may be used to bleach flour? Aren't you the man responsible for that?

2260 A. Not unless it is drawn from my bulletin on the subject; I offered no advice to the law makers.

Q. But you published your bulletin, and sent it to them?

A. I published the bulletin in October, 1907, and send it to them. I sent it all over the state. I did not send it to the law makers.

Q. Now, with respect to the effect upon absorption, what effect has bleaching upon absorption?

A. I was unable to find that it had any effect.

Q. You found it did have one, didn't you, and that was, in one case out of four, that it was favorable to unbleached, did you not, and so reported in your bulletin, Page 43?

A. Yes, it is so reported here. The difference was less than the experimental error in that case.

Q. At the hearing at Washington, did you not state, in respect to acidity. "In nearly all cases I found there was no difference in acidity"? A. Yes.

Q. "In a few cases, I found there was a great difference"?

Q. Yes.

Q. "Where I took a sample of unbleached flour, and treated it with increased quantities of the bleaching agent, I found that, up to a certain point, there was no increase in the acidity, but a certain point came where it did increase the acidity and, from that point on, increasing the amount steadily increased the acidity, with slight fluctuations". Did you so state?

A. I believe I did.

Q. Is it the truth? A. That is my opinion.

Q. Now, have you your bulletin there?

A. I have it right here.

Q. Look at page 40 and 41. A. I have it.

Q. That shows your table of acidity, does it?

A. It does.

Q. Now, you only carried out your decimals to two places. Isn't that all? A. To two places, yes.

Q. But, if you begin at the top, and go to the bottom, and take the average, it would show increase from the beginning, wouldn't it?

A. We cannot be referring to the same table. Page 41?

Q. Yes. What would be the effect, if you had extended it to three decimals? Wouldn't it have shown increase, at ten Cc., at twenty, at thirty, at fifty, at seventy-five, and so on?

2261 A. You are referring to Table 9 on Page 43?

Q. Yes. A. Yes.

Q. If you had extended it to three decimals, it would have shown an increase?

A. I have no knowledge that it would. I have no reason to think it would.

Q. Why not? It is so delicate and small, that, if you took short steps, you cannot measure the steps. Isn't that true?

A. That is true.

Q. And if you haven't in any place where you have shown increases, taken as short steps as you did this? You took steps by ten,—ten, twenty, thirty, fifty, sixty; then, twenty-five, and one hundred, and because you find it where the step is one hundred, and can measure it, you say it does not take place at all at the beginning? Is that it?

A. There is no evidence of it taking place.

Q. No evidence that it does not either, is there?

A. No evidence that it does not.

Q. So, it shows, if it shows anything, that you cannot measure it? A. Yes.

Q. So, it is not scientific, and exact to say that that sort of work proves there is no increase in acidity, is it?

A. That there is no increase in acidity shown.

Q. Did you slip in "shown", to mislead somebody? It is not demonstrated that there is no increase in acidity, is it?

A. No, it is put in to make it scientifically correct.

Q. Yes? It is a negative result, isn't it?

A. It is a negative result, yes.

Q. And a negative result, in chemistry, is valueless, in the face of a positive result, is it not?

A. Well, that depends upon the nature of the positive result, if it is on the same basis.

Q. I mean the same basis, of course.

A. Of course, if it is on the same basis, yes.

Q. The positive result on milk, would not disprove a negative result on water, but a positive result on water, under like conditions, would make a negative result on water worthless, wouldn't it, under the same conditions?

2262 A. That would depend upon who obtained the two different results.

By the Court:

Q. The same man. A. The same man.

By Mr. Butler:

Q. The same man. A. Throw the whole thing out.

Q. So, then, if you were examining a stomach for poison, and you looked as carefully as you could, and did not find any, and then you looked again and did find it, there is no proof of any poison in the stomach?

A. If you isolate the poison—get a positive proof of it?

Q. There is a positive result that would make a million negative results worthless, isn't there? A. Yes.

Q. That is the way they hang people, sometimes, isn't it?

A. Certainly. That is correct.

Q. It is just exactly comparable to the fellow who saw the man steal the sheep. His testimony is worth the testimony of a thousand men who did not see it, isn't it?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

The Court: Objection sustained.

A. Yes.

By Mr. Butler:

Q. Now, you think it is nonsense, do you not, to speak of this bleaching of the flour, by means of this gas, as "aerating", or "aging," or "purifying"? A. Will you read the question?

(Last question read by the reporter.)

A. I do.

Q. You do not believe that this Alsop process adds any age to flour, do you? A. I do not.

Q. You do not believe that this Alsop process does any aging to flour, do you? A. I do not.

Q. You do not believe it does any purifying of flour, do you?

A. I do not.

2263 Q. You have studied it, too, haven't you? A. Some.

Q. You do not believe that it is the equivalent of aerating, either, do you?

A. I don't know. I formerly believed it was not.

Q. Did you cause to be published, as late as the 1st of March, 1908, in the American Miller, a statement containing this language: "It is nonsense to speak of bleaching flour by means of nitrogen peroxide as aerating, aging, or purifying." Did you not?

A. I did not cause anything to be published there, but it sounds like a speech I made, yes.

Q. You made a speech, didn't you?

A. I made a speech about that time, about that effect.

Q. And believed it to be true, didn't you? A. Certainly.

Q. Still do, don't you?

A. I have had some doubts on one point, since.

Q. About the aerating? A. Yes.

Q. Have you got around, on the aging, yet, or do you still think that nonsense? A. Never gave that any consideration.

Q. So, you still think it is nonsense to claim that this bleaching artificially ages flour, don't you? Still think it is nonsense and humbug? A. I stand by that statement exactly.

Q. In your bulletin, you published that the maximum effect of bleaching, in substance, at Page 102, is obtained with one hundred to one hundred and fifty cubic centimeters per kilo of flour. "Excess of this amount gives disagreeable odor, and makes the flour more objectionable for bread, as the amount increases." Did you so state? A. I believe I so stated.

Q. And so believed? A. I certainly believed it.

Q. What do you think the active agent in bleaching is?

A. At the present time I have no idea what it is, whether it is nitrogen peroxide, or whether that forms over into one of the other oxides of nitrogen.

Q. Did you used to have views about it?

A. I assumed there wasn't any question but what it was nitrogen peroxide.

Q. Have they talked you out of that, yet?

A. Nobody has talked to me on the subject.

2264 Q. You still believe it is nitrogen peroxide gas, don't you? A. That is my working hypothesis.

Q. And you still believe it, or you would not work on that hypothesis, to pursue the truth, because, if you started on a false hypothesis, your conclusions would be wrong?

A. When I use any hypothesis, I do not believe it. I use it to work on, the same as I do not believe in atoms.

Q. You do not believe, then, the hypothesis you have been working on in all your investigations in this case?

A. I say I do not put it down as a matter of belief. It is a working hypothesis.

Q. You spend many, many weary months, and long days, and long nights, studying bleached flour, have you not?

A. Yes.

Q. Been one of the chief works of your life?

A. No, not by any means.

Q. A very important one?

A. It took quite a bit of time.

Q. Your working hypothesis was, that the bleaching agent was NO2 gas? A. Exactly.

Q. You were pursuing the truth indifferently, patiently, doggedly, honestly, weren't you, trying to find out the truth?

A. Yes.

Q. You know, do you not, that, if you work upon a false hypothesis that is important to your conclusions, that your conclusions cannot lead you to the truth?

A. Oh, no, that is not the case. You may work on a false hypothesis, and arrive at the truth. A great majority of the hypotheses are false, although they do lead to the truth.

Q. Then, did you assume this was a false hypothesis, or a true hypothesis?

A. I assumed it was a true hypothesis. I assumed it to be the correct explanation of the action, until I went to Washington, and heard Dr. Dunlap.

Q. He changed your mind, did he?

A. He opened my mind to doubt as to the correctness of my former assumption of the facts.

Q. As to whether it was nitrogen peroxide?

A. Yes, sir.

Q. Have you settled that, then?

A. No, sir. Have not worked on it.

2265 Q. You said, now, did you not, in answer to this question, "What is the active agent of the Alsop process", and did you not answer, "I accept the results obtained by my predecessors in that respect"? A. I did.

Q. You claimed it was nitrogen peroxide?

A. I accepted that.

Q. "I accepted that assumption in all my experiments, in which I used nitrogen peroxide as the bleaching agent, in the laboratory. I proceeded in this way" and so forth?

A. Exactly.

Q. Do you think nitrogen peroxide is made by the flaming arc? A. I do.

Q. Do you think that, when it comes in contact with moisture, it forms nitric acid and nitrous acid?

A. When it comes in contact with moisture, yes.

Q. Do you think that the nitric acid that is made by the Alsop machine combines with the flour, and forms compounds in the flour.

A. If nitric resulted from the action on the moisture of the flour, I believe it would combine with constituents in the flour.

Q. If there is any nitric acid, it makes nitrates in the flour, in your judgment? A. In my judgment.

Q. All your experiments, here, with the spraying tests, and all that, proves, does it not, that it does so combine?

A. Yes.

Q. What is that? A. Not the spraying experiments.

Q. Well, some of your experiments prove that?

A. If there is any nitric acid there, it must have combined, at some time, with something in the flour.

Q. Just as sure as NO2 combines with water, and makes nitric acid, just that sure nitric acid combines with ingredients in the flour, and makes nitrates? Isn't that true?

A. Well, I could not answer that that way, because I could accept one, and not the other.

Q. You can accept what one? A. One qualification.

Q. What one, and what is the other one?

A. I won't question the combination of the nitric acid with the constituents in the flour.

Q. If it be there? A. Yes.

2266 Q. Well, I say, if it be there.

A. Oh, yes, if the nitric acid be there.

Q. Just that certain will it combine with the flour?

A. If it is there, I believe, fully, it will combine.

Q. With the organic constituents? And, if there is enough of it so you can see it, just that certain will it be the xanthoproteic reaction, isn't it?

A. I do not believe it would.

Q. (Referring to an exhibit) Is that the xanthoproteic reaction? A. It looks like it.

Q. That was made by pouring nitric acid on flour.

A. .01, or .1 nitric acid?

Q. I don't remember, but I say, nitric acid on flour will produce the xanthoproteic reaction, won't it?

A. When it is sufficiently concentrated.

Q. Is there any free nitric acid in that bottle (referring to exhibit). A. I don't know.

Q. Could you tell by examining it?

A. I could by analyzing it.

Q. By looking at it?

A. I could not tell by looking at it.

Q. What would you say as a chemist,—now, there was some flour, and I took some nitric acid of commerce, and poured it onto it, do you think there was any free nitric acid in that?

Mr. Elliott: Concentrated.

Mr. Butler: All right, call it concentrated.

Q. Is there any free nitric acid in it?

A. I would certainly expect to find free nitric acid in there, if you poured concentrated nitric acid on the flour.

Q. Why?

A. The reaction will cease, at a point, there.

Q. If it was ten per cent, would it?

A. It would go down until some nitric acid was so dilute that the dilute nitric acid would not act.

Q. Dr. Folin told us that he put ten per cent nitric acid on some flour. Do you think that would leave free nitric acid in there?

A. Some free nitric acid, I would expect to find in there.

Q. Do you think it would make the xanthoprotein reaction?

A. I certainly do, ten per cent nitric acid in the flour.

2267 Q. And if there was a good deal more flour there, you might not find any free nitric acid? Isn't that true?

A. If that were mixed in, now, with flour that was treated with nitric acid, a sufficient quantity of nitric acid, there, would combine with the constituents in the untreated flour and you would lose your free nitric acid.

Q. It depends upon quantities, doesn't it, and dilution?

A. Exactly. Concentration and quantity.

Q. Quantity and concentration, but, the nature of the thing does not change, does it? The commecially bleached flour, I would like to find out how much you call "commercially bleached flour".

A. Commercially bleached flour, I call flour that has been bleached and placed upon the market for sale, or part of the same.

Q. You, in your inquiries and investigations, have found what you called "commercially bleached flour" to contain as high as twenty seven and a half per cent of nitrite reacting

material, if calculated and expressed in the terms of nitrite of sodium, have you not?

A. I got it under conditions in which I was trying to get commercially bleached flour, but I have doubts, now, as to whether some of those high ones were strictly speaking commercially bleached flour.

Mr. Butler: I move to strike that out.

The Court: It may stand.

By Mr. Butler:

Q. Did you not report, in your bulletin, that the maximum per cent was twenty-seven and a half, under the head of commercially bleached flour? A. I did.

Q. Believed it to be true? A. Yes.

Q. Now, you begin to think it was not commercially bleached?

A. A good while ago I began to think that.

Q. What do you think happened to it, now?

A. Just the same as I thought a good while ago, that the millers who sent this to me were slow in sending it in, and I wrote them a second letter, and they thought they would do an extra good job. After I wrote them that letter, they did an extra good job. Most mills were not bleaching at that time.

2268 Q. You had the millers send you in some samples?

A. I did.

Q. They knew you were expecting to see whether it hurt the flour? A. Yes.

Q. And they sent you samples, so you could find out?

A. Yes, they did.

Q. So you think when they were making these samples up, for you to find out whether bleaching hurt the flour or not, you think some of the millers were a little careless, and bleached it too strong?

A. No, you haven't my correct meaning. Some of them promised to send it, and they forgot about it, when I sent them a sack, and I sent them a second letter, later, and urged them.

Q. And they overbleached it, in their excitement over the second letter?

A. Not all of them, no. That twenty-seven and a half, I found came from one of those.

Q. So, you think that he got excited, knowing that you were going to find out whether bleaching would hurt it or not, and bleached too much?

A. No. I had requested him to bleach his low grade flour, and send me a sample, and he wrote that he had given it good treatment.

Q. And you think he got excited and bleached it too much?
A. No, he was not excited. He simply bleached it for me.
Q. So you would be able to show it was injurious? Don't you think these millers know enough to bleach lightly when they are sending it in to you for examination? Don't you think they are smart enough set of fellows, for that?
A. Not a bit of that. It was strictly a confidential matter, for their own information.
Q. Was that before it got into the laws of the state of Nebraska that NO2 could be used for bleaching flour?
A. Oh, that was a long time ago. That was 1906.
Q. Do you know whether the millers had anything to do with that or not? A. With which?
Q. Getting it into the laws.
A. I don't know anything about it. I presume they did.
2269 Q. The average in bleached samples, you found to be 6.3 parts nitrite reacting material, calculated and expressed as nitrite of sodium? A. Yes.
Q. 6.3 parts? A. Yes.
Q. Have you ever determined how much gas it would take, in a dilution like that (referring to an exhibit)—you bleach in your laboratory, I believe? A. We do.
Q. A good deal? A. Yes.
Q. Have you any idea how much gas it would take, like Exhibit 51 to bleach a kilogram of flour like there is in this exhibit, 50, so that it would show 27.5 parts nitrite reacting material, expressed as nitrite of sodium?
A. It would take somewhere about fifty, or a little more Cc. per kilogram—cubic centimeters of nitrogen peroxide per kilogram.
Q. That is, the nitrite of sodium? Fifty? We will say there is, here in this (referring to exhibit) four and one, which would be one in five, so, you would say it would be solid up to fifty? That would be it, on this scale?
A. Solid to fifty, to produce the twenty-seven and a half.
Q. And about five times that, to get it into condition comparable with this?
A. Yes, it would. That represents one to five.
Q. Now, if you inhale that much, it would be a pretty bad thing to do, wouldn't it? A. Yes.
Q. Probably kill you, wouldn't it?
A. In that concentration?
Q. Yes. A. Oh, I don't think it would kill you.
Q. It would make you sick?
A. I don't think so. It would be very disagreeable.
Q. Don't you think it would burn your flesh, and your throat, and your esophagus, and turn them yellow?

A. It would irritate the mucus membrane severely.
Q. It would probably blister the skin off, wouldn't it?
A. I don't know. I never tried it in a measured volume.
Q. You don't think that this makes the bread any better, do you—this bleaching? A. Nothing, except it—
2270 Q. (Interrupting) In quality, I mean, except color?
A. Color, that is all.
Q. You do not think it makes it taste any better?
A. Not a bit.
Q. You do not think it makes any better gluten?
A. I do not. Never did.
Q. You do not think it makes any more nutritive food, do you? A. No.
Q. You think that is a humbug, don't you?
A. Why, certainly.
Q. And you think that the only thing in God Almighty's world that can be said in favor of it is, that it makes it a little whiter?
A. That is the only thing. Much whiter, sometimes.
Q. It depends on how much bleaching juice you use? Isn't that it? A. Other things being equal.
Q. And it puts nitrites in the bread, too, doesn't it?
A. Either nitrites, or something that gives the same reaction with the Griess solution.
Q. And you think, don't you, that unbleached flour does not contain nitrites?
A. I was never able to get any unbleached flour, in the experiment station laboratory when I carried out experiments on it, that gave the reaction, but all unbleached flour in Kansas City seems to give a faint reaction.
Q. They brought you around a good deal of that, since you were here? A. Samples I brought down, unbleached.
Q. How? A. Samples I brought down, unbleached.
Q. But you reported, didn't you, to your people, and you believe it, did you, that the unbleached did not give the test?
A. I do.
Q. And you think you can tell bleached flour by the Griess test, don't you? A. I do.
Q. And, Professor Alway, you found, didn't you, that these acids that you assumed to be made—I will be perfectly fair with you—combined, attack the coloring matter, and the oil, and combine chemically with the ingredients of the flour, don't you? A. Well, I was unable to locate the whole of it.
2271 Q. Yes, I understand.
A. I found something there that I could account for, assuming it formed nitrites, but I could not get any free nitric

acid which had even formed or went in there. I had to assume it, though.

Q. But you assumed that it had, and that it had combined wholly? A. I did.

Q. And that the bleached flour was not giving off NO2 gas, to contaminate the wholesome brother in the sack opposite it?

A. Yes.

Q. You so reported and found? A. Yes.

Q. But, if you put it in a flask, and found the NO2 there in equilibrium, and pumped it out, it would look as if it did —at least it might remain free?

A. But I cannot do that, when I repeat that experiment.

Q. You cannot?

A. I have failed, up to the present time.

Q. You saw this thing, here, that pumped it out of the bread?

A. I saw that experiment. Very beautiful experiment.

Q. You had never tried it before, had you? A. No.

Q. And as a chemist, you think it the fairest, most satisfactory way to test that very thing you ever did see test anything, don't you? A. Well, to test what?

Q. To test anything that it tests, whatever that is.

A. It is a very fine experiment.

Q. You think it remains in the bread?—now, you are not a toxicologist?

A. No, but, before that,—what was the question?

Q. I said, you thing it remains in the bread? A. What?

Q. The nitrite.

A. Sometimes it does, and sometimes it disappears entirely. In all cases, it is greatly reduced.

Q. To about a third, in bread?

A. About half the time, when I made the bakings, I found it disappeared.

Q. Do you know of any reason why the boiling of flour would drive the nitrites out?

A. Yes. I know of reasons why it might, and, again, other reasons why it might not.

2272 Q. The amount of nitrites found in the flour in Nebraska, you reported varied from one half to fifteen parts per million of the flour? A. Where did I report that?

Q. Press Bulletin, Page 24. That is the bulletin your university sends out, I think.

A. If it is in the Press Bulletin, I so stated.

Q. That is in substantial harmony with your recollection, is it? A. Yes.

Q. Now,—

A. (interrupting) You see, that is not as high as I reported in here apparently. The Press Bulletin, I think, probably was written before the last of these were gotten out.

Q. Now, in your bulletin, Number 102, Page 51 to 52, is it stated there in substance as follows: "Nitrites, in comparison with nitrates, are very powerful drugs. They produce cyanosis, throbbing in the head, vertigo, staggering, and so forth, and finally complete relaxation." Did you so report? Is that your views?

A. That is not the way it appears here. Oh, I see. Yes. Part of that I wrote, and part I quoted from Parke-Davis & Company, Manual of Therapeutics, a commercial publication.

Q. You [adapted] the views?

A. Yes. I accepted them.

Q. That was your view?

A. Yes. I quoted that as authority.

Q. And you then believed, and still believe that to be the fact? A. Yes.

Q. Now, this refers to the question I first asked you, which may appear to you to be a little unfair, but if it is, you straighten it out. The American Miller, March 1, 1908, at Page 213, credits you with saying, "It seems necessary to entirely prohibit artificial bleaching of flour; to permit only the use of nitrogen peroxide; or, to keep a number of investigators busy, following up each new bleaching agent." Did you so state?

A. Part of it sounds entirely familiar, but part of it does not.

Q. Well, look at that.

A. I would like to have the original.

Q. That, I understand to be in the alternative, namely, that you must stop the whole thing, or confine it to NO2, or
2273 keep a gang of investigators following new bleachers, like NOCl, and the like, and the rest of them, around.

A. This is Page 219. That was taken down by a stenographer, as I furnished no manuscript to a paper, and the quotation about Dr. Hayward is inaccurate. The punctuation is not my punctuation.

Q. Then, we will forget that you said anything about it, and I will withdraw the question, if you say that you do not favor bleaching by NO2, but, if you are still in favor of it, I think I will still argue it with you.

A. It should be punctuated as follows: strike out the semicolon, and put in a comma. "It seems necessary to entirely prohibit artificial bleaching of flour,"—or should go in there,—or to permit only the use of nitrogen peroxide, or to keep a number of investigators busy following up each new bleaching agent." That expresses my sentiments, and that is the way I would punctuate it.

Q. That is the way I read it.

The Court: No you had semicolons.

Mr. Butler: No, but that is the meaning that I meant to convey.

Q. Now, Press Bulletin, at Page 24, gives this: "The Griess-Ilosvoy reagent gives pink coloration with all commercially bleached flours, and no coloration with unbleached flours, even if the latter has been stored beside the other for ten months." That was your experience? A. Yes, that is right.

Q. You never found any four parts to the million in the short time, did you, imparted from the atmosphere?

A. Well, I found large quantities, when I kept it in the laboratory, but not when I kept it in a well ventilated store room, outside the city.

Q. You found none? A. No.

Q. And, it is quite likely, if we were to spill some nitric acid here, on something that would produce NO2, that it would contaminate the flour, even, in these sacks, under the table? Isn't that true? A. It very likely would.

Q. Right on the surface? A. Yes.

Q. And certainly would, these flours that are spread out here, wouldn't it? Isn't that true? A. Yes.

2274 Q. (Handing the witness a piece of paper) I just hand you that, and I will not bring it out, unless you want to.

A. It has been the cause of unpleasantness, in the past (returning the paper to counsel).

Q. You said, at the hearing, did you not, in substance that, "In one or two cases at that time they were not bleaching their low grades, that is, their lowest grades, and perhaps their second grade, whereas these samples bleached for my accommodation, and for the investigation, ran up in some cases to thirty, those very high percentages being where millers had attempted to bleach their lower grade flours to make them appear higher." Now, you have found that, haven't you, to be the fact, in investigations of commercially bleached flour, that they make the relatively lower grades appear higher?

A. No. That is a wrong implication. You are a little mistaken there, about what I stated at Washington. It was not that, directly, these millers were bleaching low grades, but practically none of them were bleaching low grades at that time.

Q. You mean they made a purposeful attempt—

A. (Interrupting) It may be, yes.

Q. To make the lower look like the higher? A. Yes.

Q. I see. A. Yes. They gave it a bleaching.

Q. And tried to make the lower grades look like the higher grades?

A. No, they gave it the bleaching, for accommodation, without regard to what the effect would be.

Q. You say, "Where the millers had attempted to bleach their low grade flours to make them appear higher."

A. I must have misstated that.

Q. I have the original transcript here.

A. Is that the original transcript?

Q. Yes.

A. That original transcript is full of errors. The stenographer told me he could not follow me, I talked so fast, and he said he would send me a copy for correction, but I never received it.

2275 Q. You say it is a typographical error?

A. That is an error, I should say.

Q. All right, we will withdraw the question, even if you say you did say it, but did not intend to.

A. I did not say it, whether I intended to say it or not.

Q. Now, you reported, did you not, at the hearing, that, by the lapse of time, the nitrites in flour did not disappear?

A. When you get below a certain limit, they stay.

Q. I know, below a certain limit, but now, didn't you find, as a matter of fact, that the nitrites recoverable, simply by washing the flour, and testing with the Griess test, and comparing with your color standard, didn't you find, by the lapse of time, that they did not disappear?

A. I have never experimented in regard to that.

Q. Did they ask you to analyze or test the flour that this man Shoecraft brought from Clinton, Iowa, which he had had for fifteen months, which was bleached?

A. Never heard of that.

Q. And that the man from Valpraiso made the yellow loaf of bread out of? A. I never saw it, or heard of it.

Q. You don't know whether that was bleached or not?

A. Don't know anything about it.

Q. After you get up to a certain point with this treatment, you do not add any more nitrites? Is that my understanding of your report?

A. If you are making an analysis, immediately, for applied nitrogen peroxide, you find a rapid increase of nitrites, as you go up, but, every day after it begins to drop down, and after it has stood several weeks, it is away down.

Q. There are some nitro compounds, which do not respond to the Griess test?

A. There is something in there that acts on it. I don't know in what form it is.

Q. You don't know whether it is catalyzing, as has been suggested or what it is? A. I don't know what it is.

Q. Until this trial commenced, you were of the opinion that bleached flour could positively be identified by this reagent?

A. I am still of that opinion.

Q. You still think so? A. Yes.

2276 Q. You do not think it so impure in Kansas City, or Chicago, or elsewhere, that you cannot tell, by the Griess test, whether the flour is bleached or not, if you get it within reasonable time? A. No. I think I can tell.

Q. You think you can tell by that test?

A. Yes, sir, by the reacting with the nitrites.

Q. You reported at the hearing at Washington, last January, that you never had found any unbleached flour giving the nitrite reacting material reaction? A. I so reported.

Q. I believe you described this bleaching reagent—this NO2, as a very suffocating odor, when inhaled, and, in very large quantities, as very poisonous, corrodes most metals, and many vegetable and animal substances. Like nitric acid, it colors the skin yellow?

A. Exactly. That is, the pure substance, without any dilution.

Q. Now, I asked you, if that exhibit, 51, was filled full of pure NO2, and you had to inhale it, whether that would not probably kill you, if you just had that thing, and had to take it right down, wouldn't it?

A. I would not think so. I would not want to do it.

Q. Don't you think it would burn right down, just like nitric acid would, away down into your lungs?

A. If all of it changed into nitric acid, it would then act. I would expect it to change over into nitric acid and nitrous acid, and the nitric acid would act like any other nitric acid of the same concentration.

Q. I know. It would be very concentrated, then, on the moisture in your throat, wouldn't it?

A. I would expect it to be very concentrated.

Q. If I pour some nitric acid out, and let it run down my arm—concentrated nitric acid, it would dig a hole down that arm, just exactly like a burning iron?

A. Yes, if I would pour concentrated nitric acid on my arm. But, I would like to mention, I do not think it would be very concentrated, if you would consider the amount, there, and the amount of moisture in your mouth, it would be dilute nitric acid.

Q. You would not want to try it on your babies, would

2277 you? You would not want that tried on any of your babies, would you?

A. I never used them for such experiments.

Q. You do not give poisons to your own family, to test digestion, and things like that?

A. I have given bread from bleached flour.

Q. Have you given them nine or ten grains of sodium nitrite to see whether it is good for them?

A. No. I never used my children for experimental purposes.

Q. Nor your wife? A. No. I should use myself.

Q. Nor yourself? A. Yes. I should use myself.

Q. You would take poison?

A. I am not a toxicologist. I have not been experimenting on poisons. If I were, I should certainly use myself.

Q. You would take poison? A. Yes.

Q. But, if you were going to take nine grains of nitrite of sodium you would like to let it oxidize a little, wouldn't you, so as to weaken it up to nitrates?

A. I would consider what the action would be.

Q. If you found a man like Schmiedberg talking about five and ten making a man very sick, with hemoglobinaemia, you would not take it, would you?

A. I haven't that matter under consideration at all. I am not in position to express any opinion on it.

Q. Now, flour treated with nitrosyl of chloride gives the nitrite test? A. I never saw any of the flour so treated.

Q. Well, you would know that from your experience, wouldn't you? A. I haven't any knowledge on that.

Q. Well, turn around and look at the blackboard. Here is NOCl, plus HNO2, equals hydrochloric and nitric acid?

A. Yes.

Q. That is what you would think would happen? A. Yes.

Q. Then, you reported, that, "It certainly seems undesirable to let them use that sort of thing, until it is demonstrated by disinterested investigation that the flour so treated contains nothing objectionable, and that the quality has not been impaired."

A. Because the nitrosyl of chloride is a very active chemical, and will act upon the carbon nucleus.

2278 Mr. Butler: We object to that as immaterial and move to strike it out.

Q. At the hearing, you are reported to have said: "I found, in very greatly increased quantities of nitrogen peroxide applied to a given weight of flour, there came a time when everything seemed to go wrong in the flour. The color, instead of becoming lighter, became darker. The odor changed, and it got worse and worse, and the color of the extract changed, and the acid increased, and in some of the highly treated samples, where I used five hundred to one thousand c.c. nitrogen per

kilo of flour, when I got them in the oven, I found they were charred; so, that for small quantities, namely, simply a change in color, so far as we had observed, but an entire change in the properties of the flour, adding almost every undesirable property to the flour. Question: Would over-treatment produce in the flour changes that were not of degree, but of character? Answer: I would expect it would." Did you so state?

A. I think that is a correct statement, except it does not refer to baking, but refers to drying at one hundred and ten.

Q. Drying? A. Yes.

Q. Now, some baker here,—I think it was Mr. Westerman, who makes crackers,—testified that this bleached flour sometimes smelled in the oven like galvanizing works. Now, would this smell which you found in the over-treated flour be comparable, some way or another, to the electro galvanizing works, that you might smell around a city?

A. I don't know of any similarity. I do not recollect just what the disagreeable odor was. It has been so long ago.

Q. Well, it was bad? A. It was disagreeable.

Q. It would probably be very much worse, in baking large quantities of it at once, in crackers, wouldn't it?

A. It seems to me it would go to the amount of concentrated nitric acid upon the fats.

Q. That would be rancid?

A. Yes. There was the rancid odor, and a trace of acrolein.

Q. Acrolein? A. Yes, a very pungent smelling substance.

Q. Well, I don't know what a galvanizing works smells like. Do you think the over-bleached flour, in large quantities, would give off a very offensive smell?

A. I do not use the term "over-bleached."

2279 Q. Over-treated? A. Yes, over-treated.

Q. Well, I meant the same thing. Now, to be a little more specific about these matters—none of these experiments which you described here to Mr. Elliott, and showed to the jury, today, could be understood, or are understood by me, at any rate, as having any tendency whatever to prove that nitric acid is not produced in the Alsop bleaching, and does not combine with the iour. A. Now, that—

Q. (Interrupting) It is not free? A. Not free.

Q. I think we understand that, but I want to emphasize that, that it is not mixed in the flour as nitric acid.

A. Exactly.

Q. Your experiments are perfectly consistent with our claim that it combines with the flour.

A. Well, with some—yes.

Q. There may be some verbal distinctions about chemistry, that we care nothing about. Now, nitrous acid,—is that free, or combined in the bleached flour?

A. I don't know. I am not settled upon that point, really.

Q. If nitrous acid is free in the flour, let us assume that, now. A. Yes.

Q. Upon its decomposing, it would give off NO2? It might? I don't say would, but might? A. Yes.

Q. And NO2 might combine with moisture, and make nitric acid and nitrous acid? A. Yes.

Q. And the cycle might continue to go along as long as that thing lasted?

A. Until the nitrous acid was all changed, it would form new nitric.

Q. Kind of a catalyzing force?

A. Oh, no, not at all. It is a change of the nitrite to nitrate.

Q. I said that, because I understood catalyzing, once.

A. There is no catalyzing agent in there.

Q. But it will keep working over?

A. It will merely change over to nitrate, under that assumption.

Q. Free nitrous acid will keep on working until it all
2280 becomes nitrates? A. Until it all changes to nitrates.

Q. But, if it produces a nitrite, as distinguished from the nitrous acid, any salt, that will not keep working?

A. Very doubtful.

Q. Those are the poisons you talked about, that cause the vertigo and this reeling, isn't it? Those are the nitrites you had in mind? A. Yes, sir, those are exactly the ones.

Q. Those are the ones you had in mind? Now, just for the purpose of being verbally exact, is a rise of temperature evidence of chemical reaction?

A. It is evidence. One evidence, but it is not proof.

Q. One item of evidence? A. One item of evidence.

Q. In given surroundings, may be proof?

A. Under certain circumstances may be regarded as proof.

Q. May, under circumstances, be proof?

A. Yes, under circumstances.

Q. Very strong? In other circumstances, simply confirmation? A. Yes.

Q. In other circumstances, mere evidence?

A. Mere evidence.

Q. And it would be misleading to say, and leave it there, without explanation, as you did say,—that is, I mean to layman,—a rise in temperature is not proof of chemical action.

A. It may be considered as evidence, but not proof.

Q. If you were talking to a class, you would want to say it may, or may not be, and so on and so on? A. Yes.
Q. It is generally evidence, though? Isn't that true?
A. It counts as evidence.
Q. It counts as evidence always, doesn't it?
A. Well I would not say always, but I would say almost always; but not proof.
Q. You said there was no increase in rancidity. Now, did you mean that? A. Yes.
Q. Is there any rancidity at all?
A. In where do you mean?
Q. Flour. A. That just depends upon the kind of flour.
Q. I mean unbleached flour.
A. Often there is, in unbleached flour, rancidity.
Q. Is that a desirable attribute?
A. Rancidity is undesirable.
2281 Q. That is the smell of the oleic acid, isn't it?
A. No, it is the smell of the lower acids.

By the Court:
Q. You get in bad butter? A. Exactly.

By Mr. Butler:
Q. That is the smell? A. Seven or eight acids.
Q. Don't you think that nitrous acid and nitric acid, in appropriate quantity, and under proper conditions, might make the oil content of flour rancid? A. Free nitric acid?
Q. Yes.
A. Yes, I would expect free nitric acid, in proper quantity, to make it rancid.
Q. It would?
A. If there were free nitric acid there.
Q. And you think there is?
A. And if it were concentrated. No, I say it is not. No free nitric acid.
Q. But you think it is there, when it goes in there? It combines? A. Until it meets the flour.
Q. You think it goes in as free nitric acid?
A. Yes, but free nitric acid, combined with the flour constituents, will not have any oxidizing or hydrolytic action producing rancidity.
Q. But nitric acid, and the fat of flour will produce rancidity?
A. When the nitric acid is concentrated enough.
Q. That is what I am getting at. Now, nitro starch is a very bad thing, isn't it?
A. Makes a good explosive. Not as good as some others, though.

By the Court:

Q. A good explosive? A. Yes. Just like gun cotton.

By Mr. Butler:

Q. Nitroglycerin is a kind of a nitro starch?

A. Very similar to nitro starch.

Q. Comparable to nitrites that may be put in flour by nitrous acid? A. It is not a nitro. It is an ester.

Q. It would have kind of a class relation, wouldn't it?

2282 A. Not to nitrites, no, but nitro starch has a class relation to nitroglycerin.

Q. You would not have very far to go to make explosive substances in this flour by this bleaching process, would you?

A. Oh, a long ways, yes. That is just what I said, that there was no nitro starch; that there would be no nitro starch formed. The concentrated nitric acid would form nitro starches, along with the sulphuric.

Q. You do not qualify as an expert on health?

A. Not at all.

Q. Nor on poisons? A. Not at all.

Q. But, of course, as a chemist you do understand that nitric acid is poison,—you may be in error, but you think it is, don't you? A. I know it is, in concentration.

Q. You think nitric acid or nitrous acid is poison?

A. That would depend entirely upon the conditions. Although I am not a toxicologist, I would want to modify it.

Q. Yes, I know, but just simply as an ordinary chemist, you think they are poison, don't you?

A. I would not say yes. I would not want to tell any of my students that, without explanatory notes—full explanation.

Q. You would not think of telling any of them it was not?

A. I would not think of saying it was or was not.

Q. You would not think of telling any of your students that nitric acid was not poison, would you?

A. Well, I might, if I should modify it afterwards.

Q. And tell them it was?

A. No, tell them it was under some circumstances, and under what circumstances it was not.

Q. Under what circumstances isn't it poison?

A. I just stated I am not a toxicologist, but you asked what I would say.

Q. So, to make the thing sure, you would say, "Look out for that stuff, it will burn you"?

A. If it is concentrated, yes.

Q. "If you take it it will kill you," is about what you would tell a green freshman, isn't it? A. Yes, certainly.

Q. That is what you do tell them?

A. No, I do not. I haven't any occasion to.

2283 Q. You would have no occasion to tell them?

A. No. The students learn not to taste things around the laboratory unless instructed to do so.

Q. And you think it is better for them not to taste nitric acid, don't you? Now, about this odor. Do you know whether this bleaching medium smells or not?

A. I don't know.

Q. You never tried that? You know it does when you use it in the laboratory?

A. If I make the nitrogen peroxide, of course, nitrogen peroxide smells.

Q. But you never were around the mills?

A. Yes, I have been around the mill, and I have smelled a substance around the agitators, whether nitrogen peroxide or not, I do not know.

Q. Have you experimented a good deal on flour bleached in your laboratory? A. Yes.

Q. A great deal? A. Oh, a good deal.

Q. Many hundreds of times, you have bleached flour?

A. Several hundred times.

Q. For the purpose of ascertaining what effect this Alsop bleaching has upon flour? A. Yes.

Q. That was the—

A. (Interrupting) Of the Alsop and all others.

Q. Yes, all others using this medium?

A. All others using—

Q. (Interrupting) Now, you believe NO2 is a distinct chemical substance, don't you? That is, that it is identified? That it is the same, however produced? A. Yes.

Q. Whether by electricity, or chemicals, or any drugs, or anything that way?

A. Whenever it is NO2, it is NO2.

Q. And you think that flour treated with it, whether in the laboratory or elsewhere, is essentially the same thing?

A. Other things being equal,—concentration, and such like.

Q. And that the appropriate and reasonable and sensible and scientific way to study the effect of this process, is to take a large bottle, and make some of this gas, and put in

2284 a little of it, and shake it, and put in a little more and shake it, and measure it, and then make your determinations, or studies, or whatever you want, don't you?

A. I have always worked on that assumption, but I have had some doubts as to whether it was entirely satisfactory.

Q. I know, but if we can't get any from the Alsop machine, to use, that is the best one in the world known to use, isn't it?

A. If I were doing that, I would apply very much greater dilution than I would in an agitator.

Q. Because of their claim?

A. No, not because of their claim.
Q. You haven't any confidence in that?
A. I don't know what their claim is. I am not here for the Alsop people.
Q. Well, now, let us see about that. Really, now that it is all over, haven't you a good deal of partisan feeling about this matter, and don't you want the bleachers to win in this law suit? Isn't your feeling that way? Now, I am not using this Dr. Alway, to be offensive, at all. Now, isn't that true, that you have, as a matter of fact, a partisan feeling, here, the feeling of contest, the feeling that comes with the fog of fighting, that you want your side to win this law suit?

Mr. Elliott: We object to that, Your Honor. I do not think that has got anything to do with it.

Mr. Helm: He has stated the reason he is here.

Mr. Butler: If the Doctor has any objection to answering it, all right.

The Court: Objection sustained.

Mr. Scarritt: The Doctor is not objecting.

Mr. Butler: That is all.

Witness excused.

2285 The Court: I am about to adjourn for the day, but, before I adjourn, I want to say that, in view of what I said before the evidence in this case was commenced, and in view of what I stated in open court before the witness now on the stand was called, there can be no other witnesses called by the defendant or claimant, to testify to the art or science of milling, nor commercial bakers, baking. I will allow one additional witness to the one now on the stand, if claimant so desires to call one, to testify as a chemist or toxicologist, and, if it is sought to advise me that I am in error by reason of having a hurried list of witnesses, counsel will meet with me in the morning at 9:30, and present their arguments.

Court thereupon adjourned to meet at 10 o'clock a. m., Thursday, June 30, 1910.

2286 Volume 4.

Morning Session.

Kansas City, Missouri, Thursday, June 30, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows:

Frederick J. Alway, in continuation of his cross-examination, further testified as follows:

By Mr. Butler:

Q. Professor Alway, in one of the excerpts from some of your former statements to which I call your attention, as I hold it in mind, and I do not pretend to hold it in my mind accurately, I got the impression that the statement was in substance to the effect that the coloring matter was acted upon by the bleaching re-agent in the Alsop process or in any of these NO2 processes, and that other bases were acted upon and converted into salts by the acid. Is that the substance of your understanding of it?

A. No, I do not know what excerpt you refer to.

Q. I cannot put my fingers on it now, but we will get along without it, probably. Well, what is coloring matter in flour?

A. I do not know what the coloring matter is in flour.

Q. Or how much of it?

A. Nothing further than the quantity is extremely minute.

Q. You would not be able to say how many parts to the million? A. I would not.

Q. Coloring of the flour, how many parts of the coloring?

A. I would not.

Q. Or whether it is a terpene or not? A. I would not.

Q. You have not observed, have you, that it has any of the essential properties of any known terpene?

A. Well, I have not investigated, all that I know about it is the definition sent me a couple of years ago about this—

2287 Mr. Butler: Never mind; I move to strike out what was sent to him.

The Court: Yes, sir, it is stricken out.

Q. I want to ask you this question, and to bear it strictly in mind, whether you yourself have observed about the coloring matter of normally white flour any of the essential properties of any known terpene?

Q. I have no observation on that at all, Mr. Butler.

Q. Then you never did observe any of the essential properties of any known terpene about the coloring matter of flour?

A. I never regarded it with any respect to that, to see whether it ever did occur to me.

Q. I think I will ask you to answer whether you have observed? A. No, I have not.

Q. What is the law of mass action?

A. It runs something like this: The amount—the extent of the re-action in any example is proportionately to the weights,

the weights of the substance taking part in the re-actions which are present in unit volume in this interval of time.

Q. Present in what? A. In the unit volume.

Q. That is in the aggregate, in the complex substance?

A. In the unit volume of space.

Q. Yes, sir, we are speaking now—flour is a complex substance, isn't it? A. Yes, flour is a complex substance.

Q. And it has a number of ingredients?

A. A very large number, yes, sir.

Q. And a good many of them will act as bases for acids?

A. Act as bases for acids?

Q. Yes, may be I am not speaking with chemical accuracy?

A. No.

Q. But if treated by acids—

A. The acids would do as I pointed out yesterday.

Q. And the acids will combine with bases in flour, some of these ingredients will act as bases so as to make compounds or salts, organic or inorganic, am I not right about that?

A. I would not be surprised but what they would.

2288 Q. Well, now, isn't that plainly the truth, here is some flour containing calcium and potassium and proteids and starch and oil and coloring matter, and may be a great variety of things in normal flour. Now if you come along with a strong acid like nitric acid, that acid will combine with various bases in the flour, will it not?

A. It will combine with whatever bases there are there.

Q. And there are there a good many, are there not?

A. I do not know that there are.

Q. Well, don't you know the ingredients of flour?

A. I have a general idea, yes.

Q. Well, are there not there a great many substances which will unite with acids, forming the base, and the acid, the radicle, will make a salt or compound, am I not right about that?

A. Well, I can't say that I know that to be the case, because I pointed out already that the acid does combine generally with—

Q. It does combine?

A. But I don't know it combines with any base, I believe it simply replaces it, replaces other—

Q. Then you are talking about the same thing, but I do not understand enough of your science. What I am trying to get at is this, there are substances there that these acids will take chemical action upon, either to combine as bases or—

A. Yes.

Q. Or replace or decompose, or something or another, that it what I am getting at? A. Yes, I admit that.

Q. You see I would not know the difference between replacement and combination as a base, you in order to be accurate you must— A. I want to be accurate.

Q. Make that distinction. But I understand it as you do then, so that upon treatment of flour by large quantities of this NO2 a great many different chemical reactions take place in the flour, a great variety of things, as you said in one of your statements, everything seems to go wrong?

A. Exactly, very large quantities, yes, exactly.

Q. The thing is knocked out as flour? A. Yes, exactly.

Q. Now you said that the 10 per cent nitric acid would give the Xantho proteic reaction, as I understood it?

A. Yes, sir.

2289 Q. Well, the 9 per cent?

A. I don't know about 9 per cent.

Q. Will the 8 per cent? A. I don't know.

Q. Will one per cent? A. I don't believe that it will.

Q. Well, now, you don't know about eight. Do you know about one? A. I have no experimental evidence on it.

Q. Well 1/80 of one per cent do you know?

A. I have no experimental evidence on that.

Q. You don't know then, do you? A. I do not know.

Q. That's it. Well, let me see, there are substances which are known, organic substances which are known as nitroso-compounds, are there? A. There are.

Q. Is nitrous acid one of the factors—of the substances which may be used to produce a nitroso-compound?

A. It is a substance most commonly used in obtaining nitroso-compounds.

Q. Now is that a mineral acid?

A. We regard that as a mineral acid.

Q. Is a nitroso-compound an inorganic compound or an organic compound?

A. Regard it strictly as an organic compound.

Q. So then, when you use the mineral acid, to make a nitroso-compound, you must have an organic base?

A. We must have an organic substance an organic compound.

Q. And such organic substances are found in wheat flour?

A. Such I am not saying such, I am not familiar that there are such; I don't know that there are such, but there are many organic substances in flour chiefly or principally organic substances, in wheat flour, chiefly almost entirely organic substances.

Q. Which, if treated with nitrous acid, are capable of forming nitroso comopunds, am I right about that?

A. I do not know that there are.

Q. Do you know that there are not?

A. I do not know; no one knows the ultimate composition of flour.
Q. What is that?
A. No one knows the ultimate composition of flour.

Mr. Butler: I move to strike out what no one knows.

2290 The Court: Yes, that is stricken out.

To which ruling of the court claimant then and there duly excepted.

Q. So then you don't know whether nitrous acid may be employed so as to produce nitroso compounds in flour?
A. I do not know of my own knowledge.
Q. All right, we will pass that. Now there are compounds spoken of as diazo-compounds? A. A great many of them.
Q. Are they nitroso-compounds or is there a difference?
A. Well, it is right on the border line there many of the compounds are.
Q. We will not go into the fine distinctions because if you explained more clearly we probably would not understand, and if we did understand we would probably forget. What I am trying to get at, may nitrous acid be used to produce diazo-compounds?
A. When you use the right organic substance it may.

Mr. Butler: I move to strike that out.

The Court: Stricken out, not an answer.

To which ruling of the court claimant then and there duly excepted.

Q. Now then when it does produce a diazo-compound an organic substance must be used with it? A. Yes.
Q. Is there any organic ubstance in flour which may be used with nitrous acid to produce a diazo-compound?
A. You mean as it occurs in flour?

By the Court:
Q. He has asked in the flour, what occurs in the flour.
A. I have no knowledge of such a circumstance.
Q. You don't know then whether nitrous acid may produce diazo compounds in flour?
A. I do not know of a substance, no, with which it could produce them.
Q. Do you know that it can not produce them?
A. No, I do not know that it can not.
Q. So then you don't know what the truth is in that regard one way or the other?

A. Only the probabilities, as I stated.

2291 Q. I am asking you what you know? A. Yes.

Q. Diazo-compounds have been isolated, have they not?

A. Oh, yes, a great many of them.

Q. A great many of them, and they are compounds that are much feared by organic chemists when found in food substances, are they not, as to the effect upon food?

A. I could not speak on that; I am not a food chemist.

Q. Are you an organic chemist?

A. I was an organic chemist; I am still.

Q. I thought you qualified as an organic chemist?

A. Well, perhaps I did.

Q. Are not diazo-compounds resulting from the use of nitrous acid dangerous and objectionable substances if in appropriate quantities in the food, or are they good substances to put into food?

A. That is not a question of organic chemistry; that is a question of physiological chemistry or toxicology.

Q. Well, don't you know the nature of diazo-compounds?

A. I naturally regard them as extremely poisonous explosive substances.

Q. That is what I thought. So that nitroso compounds produced by nitrous acid is also regarded with disfavor at least, either as explosive or poisonous, or something, considering quantity, I am not getting into this poison definition at all?

A. I don't have the familiarity with them so—

Q. Well, I know, but they are looked upon with suspicion and disfavor are they not?

A. You mean as foods, or taken as foods?

Q. Yes, as foods?

A. Yes, we look upon all the compounds that we are not certain they are all right, with disfavor.

Q. Especially if nitrous acid be the radicle or substance used to produce them?

A. That would not make any difference.

Q. It would not make any difference?

A. No, it would be just the same no matter how it is produced.

Q. Well—

A. The nitroso-compounds would have its properties.

Q. Well, nitrous acid would always have to be used?

A. Oh, no sir, not always.

2292 Q. In the nitro-compound?

A. We can get nitroso-compounds without nitrous acid, a good many you can not get with nitrous acid.

Q. Now in flour there are substances known as amins or amino-compounds? A. Oh, yes.

Q. Are there primary amins and secondary amins?

A. There are primary amins.

Q. Well, if there are primary amins, one would naturally expect there would be some other kind of amins, because primary means first?

A. Of course, in the primary, we make primary and secondary and tertiary, but I don't know of any secondary in the food, in the flour.

Q. But it may be produced, the primary, the secondary amin? A. Oh, we can make the secondary amins, yes.

Q. And may be produced by the employment of one or the other of these acids, nitrous acid or nitric acid?

A. No, we do not make amins showing acid.

Q. I did not ask you how you do make them. I ask you if do know that the amin-compounds, either primary, secondary or tertiary, may not be made to some quantity so that they exist in the presence of or by the use of nitrous acid or nitric acid?

A. I would state that they may not be produced to the best of my knowledge by these acids.

Q. Do you state as a fact that they can not be produced?

A. I am not making any statement of the kind, all things are possible.

Q. Yes, now these amins, specially the nitrates, there are substances known as nitrate amins?

A. Nitroso amins separate.

Q. That is, that means that nitrous acid has been used?

A. No, it does not mean that; it means that the nitrum NO group has taken the place nitroso-amin.

Q. And it means an element of nitrogen in there?

A. The NO group, that is the nitroso group.

Q. Am I within limits when I say that that is the oxid of nitrogen?

A. No, it is not the oxid of nitrogen that is in there; it has lost its original property in part.

Q. Is ON different from NO? A. Entirely distinct.

Q. Well, I didn't know that, but you have the oxygen and the nitrogen? A. Both in there, yes.

2293 Q. And the nitrous amin is a poisonous substance?

A. I don't know in regard to that, I would not be surprised at all.

Q. Now, I am not getting into this trouble about definition again. You told me that the diazo was explosive and dangerous and deadly, and all that sort of thing, but now about the nitrous amin, is that regarded as objectionable and with disfavor and poisonous or injurious or deleterious or bad?

A. I don't know nothing about how it is regarded as a poison; I would not hesitate to work with it in the laboratory.

Q. Oh, no, and you work with strychnine in the laboratory?

A. Yes, sir.

Q. And prussic acid, there isn't any poison that you are afraid of in the laboratory if you know it is in the laboratory?

A. Yes, sir, and I would not use—

Q. Knowing where it is in the laboratory, isn't that true, is there any poison that you are afraid to work with in the laboratory if you know? A. Yes, sir, there are.

Q. What are they?

A. Hydrocyanic acid and mercury diethyl.

Q. So am I, but I didn't know any chemist was. Now, hydrocyanic acid is prussic acid? A. Prussic acid.

Q. Prussic acid you are afraid of in the laboratory even; what is the other? A. Mercury diethyl.

Q. Spell that. A. D-i-e-t-h-y-l.

Q. It sounds a little bit like a girl's name. Is that known by any popular name, mercury diethyl?

A. No, it has no popular name.

Q. That is the only way it is spoken of?

A. The only way.

Q. There are two substances so deadly poison that you are afraid to use them even in the laboratory, are they?

A. I would not use them without proper precaution, I would not attempt to work without proper precautions because it changes the gases readily and may inhale them.

Q. You would not attempt to work with anything without proper precaution, that is running in a circle, isn't it, Professor?

A. Not necessarily, no, I would work with strychnine with impunity because I would not get it in my mouth.

2294 Q. If using proper precaution no solid will kill you if you don't get it in the tissues some way, will it, that you know of; no solid will kill you if you don't get it into your tissues some way, that you know of? A. Not that I know of.

Mr. Elliott: I object to this examination; I don't see that it is relevant to any issue in this case at all.

The Court: Well, perhaps he is about through with it.

Q. Are you familiar with the chemical formula for the proteids?

A. Yes, so far as we have any conception of it, we don't know the formula of any of the proteids?

By the Court:

Q. Sir?

A. We don't know the formulæ of any of the proteids.

Q. Then you could not give it. He says he don't know.

A. We have general ideas of how they are built up and the way they break up.

The Court: Well, let's get along.

By Mr. Butler:

Q. I will call your attention for convenience in formulating a question to page 25 in Ammerstein, translated by Mondell, where there seems to be written some chemical [steam] or formula, and ask you if they do not indicate the primary and secondary combinations of proteids which will result in the primary and secondary re-action in nitroso production or compounds?

A. The one which is marked primary, that is the one you mean, primary?

Q. Yes.

A. Is a primary alone, and that with nitric acid will not produce a nitroso compound but will produce an oxy compound.

Q. Read that into the record, will you?

Judge Scarritt: We object to that as hearsay evidence, if your Honor please.

Mr. Butler: It is merely to save me the trouble of reading it.

The Court: I suppose the question in effect is, is that statement correct?

Mr. Butler: Yes.

Judge Scarritt: And he made his explanation of it.

The Court: Go on, Mr. Witness.

2295 To which ruling of the court claimant then and there duly excepted.

A. Well, I read the formula and then mark it. The main group to which I refer is that attached to the HN2 group in the following formula: NH2, CH2, C3H6, CH joined at one side to CO and at the other to NH, the nitrogen in the last group being joined to CO, and that to CH, and so on.

Q. Now, that with nitrous acid forms what?

A. An oxy compound.

Q. An oxy compound. Is an oxy compound different from a nitroso compound? A. Entirely different.

Q. And from a diazo compound? A. Entirely different.

Q. What is the difference?

A. I will show you on the blackboard, if I may.

Q. Yes, sir, you may.

(Witness goes to blackboard and writes: CH—COOH / NH2 that is amino compound.

Q. You will have to read that into the record because we lose the blackboard sooner or later.

A. All right. The amino compound is HOOC CH.

Q. Well, you are reading that like a Chinaman, aren't you, beginning at the right hand and reading to the left?

A. We have to read at the beginning.

Q. I said that for the benefit of the reporter.

A. Yes. It makes no difference which way you read these in chemical formulae.

Q. We ought to read them from left to right, then, so that the reporter will get them; read from left to right.

A. I read from left to right. The compound I am giving CH3—CH—

Q. That is—CH?

A. In writing it we always understand there is a dash there.

Q. You better say the dash so he will understand, if it does not change the meaning, Professor?

A. No, not at all. CH3—CH—COOH—joining the CH to NH2.

Q. That would be the corresponding diazo compound if it existed. You read that into the record.

A. In the above formula the NH2 group is replaced by the group NNOH.

2296 By a Juror:

Q. Why do you change the color of your chalk?

By Mr. Butler:

Q. Now, you change the color in your chalk?

A. Yes, sir.

Q. To indicate NNOH, that is the diazo group?

A. Yes, sir.

Q. That is what I thought, mark that diazo, that is it.

A. Now, the oxide group, you want the oxic now.

Q. Oxic.

A. And I will put in the amino-compound, the NH2 group is replaced by the OH group, giving an oxid compound.

The symbols written on the blackboard by the witness are as follows:

CH3—CH—COOH NH2	amino
CH3—CH—COOH N=NOH	diazo
CH3—CH—COOH OH	oxy.

Q. Now, what is the oxy group?

A. OH—oxy or hydroxy.

Q. Now, I want to speak of the secondary group in the same way. You say that that with nitrous acid will not form nitroso compounds or diazo compounds?

A. In the first place that is not a secondary amin, that is a secondary derivative, it is an amido.

Q. It is an amido?

A. And in order that the secondary amides may form nitroso compounds they must, according to Beilstein be—

Q. Let us forget Beilstein.

A. They must be compounds in character.

Q. Then may the amides with nitrous acid either directly or indirectly produce the diazo or nitroso compounds?

A. They would not produce diazo, they would produce nitroso if the amid was sufficiently basic.

Q. All right, let us assume that the amins are sufficiently basic, and the nitrous acid is sufficiently acid, then we would get the nitroso compounds, would we, under proper conditions?

A. Yes, sir, if you had a secondary amid sufficiently basic you would get the nitroso compounds.

Q. Well, that is well known by chemists? A. Oh, yes.

Q. It really gets itself down to the method of expression after all, doesn't it? A. It does.

2297 Q. The difference that appeared between you and me a little while ago.

A. I would not say so, no, not chemically, I said.

Q. Not chemically, but I mean—

A. Accurately, no, I would not say it was that at all.

Q. Not scientifically but considering my frailness in the use of the language.

A. Can't express such things in any except scientific language, as far as I am aware of.

Q. We are aiming at the same thing, you hit it square and I came around behind it and kicked. Well, does not nitrous acid act upon these groups, both the primary and secondary, no matter their cause? A. Not necessarily.

Q. Well, now, not necessarily, but will it not?

A. Well, with that limitation about nitroso that I stated.

Q. It will?

A. Yes, if it is sufficiently basic it forms the nitroso compounds.

Q. Your investigations then enable you to say with great certainty whether or not these substances used to bleach flour, nitrous acid and nitric acid, will not produce these things?

Judge Scarritt: We object to that because there is no evidence on which to base it.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. It will be very little surprise to me, surprised so often.

Q. I ask you as a chemist if nitric acid or nitrous acid will not, in flour, under proper conditions produce diazo compounds?

A. As a chemist I really never use the expression "impossible" in regard to chemical re-action.

Mr. Butler: I am going to have that stricken out, and I am going to see if I can get you to say no, or you don't know, or yes, to that.

A. Will you read the question?

Q. We claim that nitric acid and nitrous acid under proper conditions will produce diazo compounds in flour, as I understand the situation. Do you say that is not true, or do you say you don't know, or that nobody knows?

2298 Counsel for claimant objected to the question.

The Court: Go on and answer, if you know, say yes or no.

A. Putting in the modifying phrase there, under proper conditions, of course it will.

Q. That is what I say. A. Under proper conditions.

Q. Now, we are not going into the conditions.

A. Excuse me, I am not willing to assume, though, that those proper conditions are there, you can put in a compound that will re-act in your flour.

Mr. Butler: I move to strike out what he is willing to assume as immaterial.

The Court: That is stricken out.

To which ruling of the court claimant then and there duly excepted.

Q. Now, then, I want to ask you whether or not by the use of nitrous acid or nitric acid, the nitroso compounds may not be produced in wheat flour under proper conditions for their production?

A. Well, I cannot give an intelligent answer when you put in that phrase "under proper conditions" unless I know what you mean there by that.

Q. Well, under any conditions then, is that an intelligent phrase?

A. Yes, under certain conditions we can have them produced there—

The Court: You are making the same mistake, and I tell you, why do you say "under certain conditions" or "not necessarily" and all these things?

A. Well, to make myself accurate.

Mr. Butler: My question gave you all the sea room you need as a scientist, I think.

Judge Scarritt: I object to his lecturing the witness.

Q. Now, then, do you say that nitro starch cannot be produced by nitric acid and flour, under some conditions which are proper for the production of nitro starch?

A. Of course, I would expect nitric acid and starch to produce nitrous acid under proper conditions.

Q. Now, nitro starch is a dangerous substance, isn't it?

A. A powerful explosive like guncotton.

2299 Q. Poison too? A. I would expect it to be.

Q. Will nitrous acid act upon phenol derivatives in flour and produce tyrosine, which is a poisonous substance, known to be a poisonous substance?

Counsel for claimant objected to the question.

The Court: Answer.

A. I think there is a mistake in the question.

Q. Will nitrous acid act upon phenol derivatives in flour?

Counsel for claimant objected to the question.

A. If it were in sufficient concentration I would expect it would act upon it—phenol.

Q. Yes, and under proper conditions nitrous acid will act upon phenol derivatives? A. Yes, sir.

Q. Produce a poisonous substance, won't it?

A. I don't know about that; I don't know what the properties are.

Q. Well, don't you know that the nitrous phenols are poisonous?

A. I have no knowledge at all on the subject.

Q. Will nitric acid act upon phenol derivatives?

A. With unusual readiness compared with other organic compounds.

Q. Did you hear the testimony of Dr. John A. Wesener?

A. I did not.

Q. Do you know of anything that will give the Griess nitrite test except nitrites?

A. I don't know of any, I haven't tried with anything.

Q. Do you know of any of the physical combinations that will give the Griess test?

A. On nitrates or phenols?
Q. Yes, which are not nitrites.
A. I never tried it.
Q. Don't know about that? A. No, I never tried it.
Q. Well, isn't it the common understanding of chemists that this Griess test will identify nitrites?

Counsel for claimant objected to the common understanding of chemists.

The Court: You may answer.

To which ruling of the court claimant then and there duly excepted.

A. Yes, nitrites of organic or inorganic form or some-
2300 thing that forms nitrous acid and nitrites.
Q. Anything that forms nitrites, nitrite re-acting material? A. Yes.
Q. Will the nitroso phenols give the test?
A. Never tried it.
Q. Well, are the nitroso phenols nitrites?
A. No, they are not nitrites.
Q. Now, when you overtreat flour you say everything appears to go wrong? A. Exactly.
Q. What is that? A. That is what I say.
Q. What becomes of the nitrite re-acting material, you could get it up to a certain point and then you could not increase it, isn't that true?
A. Well, when you first apply it it is certainly increased, but after standing, it goes down rapidly, the more you put in the more rapidly it declines.
Q. What becomes of it?
A. I don't know what becomes of it, never attempted to identify it.
Q. Isn't it a part of your knowledge of this subject of bleached flour that the nitrites which are put in by the bleaching do disappear with more or less slowness or rapidity?
A. Well, I have never found that to be the case where a moderate quantity has been used.
Q. Well, where any moderate quantity has been used what is it?
A. Well, I never found it in the case of the samples that I obtained from the mill.

Mr. Butler: I move to strike that out.

The Court: That is not an answer.

A. Will you read the question?

(Question read by the reporter.)

A. Well, where a moderate quantity is used it disappears with great readiness.

Q. What becomes of it? A. I don't know.

Q. Don't it form nitroso compounds?

A. I don't know; I would not expect them to.

Mr. Butler: I move to strike out what he would not expect.

2301 Judge Scarritt: We object to striking it out.

The Court: That may stand.

Q. Did you ever try to find out whether or not bleached flour will contaminate other flour by laboratory experiments. I have asked him if he ever tried to find out whether or not bleached flour would contaminate other flour experimentally in a laboratory?

A. Well, I can tell you what it did; I don't know whether it would answer your question.

Q. I ask you to tell me what I ask.

A. Well, using the word "contaminate" there, I would say no.

Q. It will put nitrites into it?

A. Yes, I tried to see if the bleached flour placed by side of unbleached flour will put nitrites into the unbleached, I was unable to find any evidence of it.

Q. Put it in sacks beside each other?

A. In a couple of cases I put under a bell jar one pound bleached and the other unbleached.

Q. How long did you keep it there?

A. I have forgotten, two days, I think, and then I had a great many sacks bleached and unbleached, paper lined, cotton covered sacks, stored side by side.

Q. Well, now, what I am trying to get at is this; Are you prepared to say that if you take a flask, an ordinary flask, dessicator, if you like, put bleached flour in it, put some other flour in a dish above it, that in the course of a week or ten days this other flour won't take on nitrites?

A. The experiments which I have attempted with exactly that object in view, I failed to get any.

Mr. Butler: I move to strike that out as not responsive.

The Court: Stricken out.

Q. I ask you if you are prepared to say now, I think I will make it plain so that there will be no misunderstanding when we get through with your answer—can you see that paper where you are? A. Yes, sir.

Q. It is a sketch called "Government's Exhibit 26". I call your attention to the drawing B; assume that to be a

flask; you put flour in the bottom of it, up here you put a dish with some KOH in it?

Judge Scarritt: What do you mean by "up here", inside?

2302 Q. Yes, inside of the flask on a pedestal. Now, do you know whether or not KOH will take nitrites or nitrous acid re-action from ordinary bleached flour?

A. With KOH there I have made no experiments, I have no knowledge.

The Court: He asked if you know.

A. I don't know.

Q. If you did, let us assume that it does, as a fact, that that thing is done, that means, does it not, that that flour gives off something or another that carries the nitrites to that KOH, don't it?

A. Will you repeat that question?

(Question read by the reporter.)

Counsel for claimant objected to the question.

Q. The quantities being observable.

A. Well, put it that way, I would say it was not evidence.

By the Court:

Q. Was or was not? A. Was not.

By Mr. Butler:

Q. Where did the nitrites come, from what?

[Q.] From the peroxide, may go out there and form nitrites.

Q. Nitrogen peroxide? A. Yes, sir.

Q. The gas itself? A. Yes, sir.

Q. Then it proves, does it, that it gives off the gas?

A. Yes, if there is no nitrite re-acting material in the body.

Q. That is right exactly, so that on that experiment just as I stated, take this flour that is seized, put it into a dish like this B on 26 and above it, with the open base put KOH on it, that takes no nitrites, your opinion is that that flour exhales the bleaching gas, doesn't it? A. It does.

Q. Now, instead of the KOH let's put some unbleached flour there, the same experiment right over, that is nitrite free flour, we will put it there? A. Yes, sir.

Q. And in the course of a few days that flour will give the Griess test for nitrites, that again proves that the bleached flour exhales a gas or vapor of some kind which contaminates the unbleached flour in that dish, doesn't it, and adds nitrites to it? A. I don't think that proves it.

2303 Q. You don't think it proves it. Where do the nitrites come from that go to the nitrite free flour?

Judge Scarritt: We object to that because he is assuming that they are there.

Q. Yes, I am asking him to assume that they are there.
A. You ask me to assume that they are there.
Q. Yes, did you understand me to do that in my last question? A. Assuming that, yes.
Q. Assuming that the nitrites go to the clean nitrite free flour? A. Yes, sir.
Q. Now, I ask you where does it come from?
A. It may come from the reduction of nitrates in the flour, in the unbleached.
Q. I see, in the unbleached?
A. In the unbleached.
Q. What reduces the nitrites?
A. I don't know any reducing agent that would reduce the nitrites.
Q. What reducing agent is in there to reduce it?
A. I do not know.
Q. Well, I know, but now are you—now, let us see if that is true, then, in ordinary atmosphere, if there is no contamination from the bleached flour, you would find this reduction of nitrates in every sack of flour, won't you, in time?
A. If there were a reducing substance generated there.
Q. I know, but you have told us that your experience is that you never do get the nitrites in an unbleached flour?
A. That is my experience, yes.
Q. That is your experience, so that your experience is that under ordinary conditions you never did get the nitrates of the unbleached flour reduced to nitrites to give the test, isn't it?
A. Not when they are stored in sacks that way; with water they do reduce to a nitrate.
Q. No, sir, you can put them under test by the same water?
A. Put water in it and the nitrite re-acts and develops at times.
Q. At times, is that the general truth?
A. Oh, I have not investigated that, I noticed that in various cases.

Q. Generally and broadly speaking, that wheat was
2304 dry, you don't get the nitrite tests in unbleached flour, isn't it?

A. With the flours that I have examined?
Q. Yes, or dough. A. I have not examined.
Q. Haven't examined unbleached dough for nitrites?
A. No.
Q. Well, is there any reason to expect that you get nitrites?
A. The reduction.
Q. Well, do they reduce? A. Might easily reduce.
Q. They might easily, but do they? A. I don't know.

Q. No. Now, then, not knowing whether they reduce or not, when we put here the contaminated flour filled with nitrites by bleaching in that vessel, and put up here above it in an open dish the pure flour that has not been bleached, or has nitrites added to it, and you find that nitrites are added, when a strong re-action comes, is it not dodging the pure and simple to say that it may be the result of reduction of nitrites which are in the unbleached flour?

A. It is not dodging you in the least.

Q. Now, then, let us assume, as the KOH experiment proves, you say that that bleached flour is exhaling the NO2 gas, that it is in fact exhaling it?

A. Well, you have stated there that, I admit it proves it.

Q. Yes, sir, that is what you did admit as to the KOH.

Judge Scarritt: On the assumption.

Q. Yes, on the experiment, assumed that to be present, the testimony supports that assumption.

Judge Scarritt: I object to that and ask that it be stricken out.

Q. Now, you substitute for the KOH unbleached flour, and you find that contaminated with nitrites, would you not say that it was the bleaching gas that contaminated that?

A. I am not clear as to what I stated here before, with the assumption.

Q. Well, I ask you to answer my question as I have now put it, to-wit, assume the fact to be that the bleached flour in the bottom of that flask exhales the bleaching gas NO2, and that after the lapse of some time the flour in the open dish, the unbleached flour in the open dish, above the bleached flour, takes on nitrites and gives the nitrite re-action, I ask you
2305 if on that state of fact you are able to form an opinion as to where the nitrites come from?

Same objection by counsel for claimant.

A. You read that question.

The Court: Oh, now, you have to have that read over; do you have to have that read over.

A. Yes, sir, to be sure.

The Court: How on earth does a scientist ever do anything unless he fixes his mind on a proposition.

(Question read by the reporter.)

A. Yes.

Q. Where?

A. From the flour below which you say exhales the nitrogen peroxide.

Q. You wouldn't think there would be such putrefaction of the unbleached flour in three or four days as to produce nitrites itself?

A. Not in the dry flour, and it was not putrefaction that I meant at all.

Q. You don't think that in three or four days there would be any such reduction of nitrates to nitrites in clean, wholesome unbleached flour? A. Not in a dry flour.

Q. Or twenty days? A. Not in a dry flour.

Q. Put water or something on it that was full of chemicals, you might get it?

A. No, sir, pure water, I refer to.

Q. Where would it come from? A. Distilled water.

Q. The purest water sometimes is very poisonous, isn't it?

A. It is claimed that distilled water is poisonous for some things.

Q. Now, under the law of mass action if you treat some flour with nitric acid do you think that the moisture content of the flour would be free from nitric acid? A. Yes, practically.

Q. Did you ever demonstrate that?

A. What I give, yes, sir.

Q. Well, I know, but let's be a little bit plain about that, about twenty pounds of water in a barrel of flour, isn't there?

A. Yes.

Q. Over that. Now, you put enough nitrite acid in there to combine with the various bases and substances of the flour, then take out the water, I am now speaking of known quantities, large quantities that ordinary men can see would be
2306 free from nitric acid; will the water be free from nitric acid.

A. If there is a vegetable acid there there might be minute quantities.

Q. Of nitric acid? A. Yes.

Q. I am now speaking of minute quantities, it is the truth. is it not, that if you take a weak base and a strong acid, and a strong base and a weak acid, and get them in combination, and they have affinity for each other, you put them together, they will never trade partners completely, will they?

A. They are arranged themselves.

Q. Not completely, though, you always get the test in the solution? A. Every one, yes.

Q. That is in obedience to the law of mass action, isn't it?

A. I don't know that that is in obedience to the law of mass action, but it is a fact.

Q. It is illustration of it, isn't it?

A. Yes, of the re-action I don't know as it an illustration of the law of mass action, but it is a fact.

Q. So that in the solution, the water, the solution, the liquid solutions in the flour, we will expect to find the nitric acid in minute quantities?

A. It would not be present as nitric acid; it would be NO3 ions.

Q. That is very technical; it would be nitric acid in solution in minute quantities? A. In minute quantities, yes.

Q. So that really to the gross mind, like lawyers and jurymen, that is a solution from nitric acid?

A. They don't have an idea of the quantity that is involved, yes.

Q. It would be in minute quantities? A. Extremely.

Q. And would be minute, free nitric acid, wouldn't it?

A. Extremely minute; it would not be nitric acid there.

Q. It would be extremely minute?

A. It would be the ions.

Q. Yes, I know.

A. The same as you get by bringing saltpetre into buttermilk, for instance.

Q. There would be free nitric acid there, be minute quantities?

A. But we don't speak of it as nitric acid when we get it broken up into these ions.

2307 What is an ion?

A. It is a constituent connected with electricity, a substance which will carry electricity in water, which will break up when it is put into water with a sufficiently dilute solution.

Q. It is not broken up or is not changed yet mechanically?

A. Yes, sir, there is a mechanical change.

Q. Well, that is very fine citing, isn't it?

A. No, it is not, fine citing; it is simply accurate science as we look upon it now.

Q. Does this bleaching take place by ionized air?

A. I don't know of ionized air.

Q. Well, doesn't this air—you have read this patent, haven't you? A. I have not.

Q. The air going from the seat of poison to the flour and there bleaches it?

A. I am entirely unfamiliar with the patent.

Q. This patent tells that the moisture content is increased by bleaching is that true?

A. I don't know, I made no experiment with it.

Q. The patent tells us that the proteins are practically doubled by the bleaching, is that true?

A. I consider that a ridiculous statement.

Q. The patent says that it increases the nutritive value of the flour because the proteins are increased, is that true?

A. I would not expect it to be at all.

Q. You know it is not so?

A. No, I couldn't say that I know it is not so.

Q. Well, now, let us see. You say it is ridiculous to say that the proteids are increased?

A. Yes, and I may say it is ridiculous without knowing it, ridiculous in my opinion.

Q. It is just as absurd to say that you could break a two year old steer in a minute?

A. I would not like to make a witness.

Q. This is as absurd as anything you can think of?

A. It is very absurd.

Q. Now, then, is not the statement that the proteids being increased and therefore the nutritive value is increased, is that not equally absurd?

2308 A. I would say that was absurd in the same way, yes.

Q. Well, you qualified that a little while ago?

A. Oh, no, I qualified about my knowing, that is all.

Q. Well, don't you know it; don't you know it?

A. I have not investigated its nutritive value, but I fully expect it.

Q. Now, there are some other things in this patent I want to ask you about to see what you think of this; They say, "The second analysis of the flour was conducted by the Henry Professor of physics of Princeton University, and his assistant professor, and it was found that while the untreated flour contained fifty-four thousandths of a gram of nitrogen one gram of flour, the treated flour contained seventy-five thousandths of a gram of nitrogen per one gram of flour. Do you hold those figures in mind? A. I think so.

Q. That is an increase of eleven per cent, isn't it, on the basis of a total would be .075, .054—would be twenty-one per cent on the basis of the total wouldn't it?

A. Thereabouts, yes.

Q. Have you any idea how much NO2 gas it would take to do that?

A. I have to calculate, it would be a large quantity.

Q. Wouldn't it be more than sixty-six thousand parts to the million?

A. I would not be surprised, somewhere near about it.

Q. Yes, now, isn't that statement chemically absurd?

A. Yes.

Q. Untrue, isn't it?

Judge Scarritt: We object to that.

Q. If it is commercially bleached, now?
A. Yes, I would say it is untrue.
Q. No foundation for it at all if the flour was commercially bleached? A. No.
Q. Are you familiar with the substance known as NO3?
A. NO3?
Q. Yes. A. I am not.
Q. N2O3? A. I have some familiarity with it.
Q. Is that the bleaching re-agent in this case?
A. I don't know.
Q. Have not been able to find out, have you?
A. I have not.
Q. Now, I want to get a little of that—this thing of producing N2O, you are familiar with N2O?
A. Or NO2, which?
Q. NO2?
A. Yes, I am familiar with it.
2309 Q. What produces it?
A. Different methods of making it.
Q. In the Alsop machine what produces it?
A. Well, I have no personal knowledge of the Alsop machine, but assume it is a flaming electric discharge.
Q. You produce it in a flaming arc?
A. The oxygen, nitrogen and the air uniting.
Q. What makes them unite?
A. The energy derived from the electric.
Q. The heat, isn't it? A. It is a form of energy.
Q. You get the same thing in the test tube, can't you, a platinum test tube?
A. The same nitrogen, you can cause them to combine at a sufficiently high temperature.
Q. Yes, sir, at the temperature that the flaming arc produces; that is all there is to it, isn't it?
A. I don't know as it is the same temperature, but it is a high temperature.
Q. What temperature will do it?
A. Oh, I don't know just what temperature will do it, it is a high temperature.
Q. Well, is it not known to you that the only point there is to this flaming arc is that it generates heat at very high temperature?
A. No, I would not want to say that is the only point.
Q. Well, what is the other point?
A. Well, there is electrical energy there.
Q. What does it do?
A. We don't know; I don't know.
Q. I say, do you know of anything except the heat that does do it? A. No, I don't know what it is.

Q. If the heat will do it in the platinum test tube just the same, beginning at fifteen hundred, continuing with greater rapidity to two thousand, twenty-five hundred and three thousand degrees, then you would say heat was all there is to it, wouldn't you?

A. I would say that heat was an important part; I don't know as it is all there is to it.

Q. Now, at what temperature does the nitrogen and oxygen and the air first combine? A. I do not know.

2310 By the Court:

Q. Well, about what; about what temperature would unite them?

A. I don't know, if I was making a guess I would guess it fifteen hundred, or thereabouts, centigrade.

By the Court:

Q. Fahrenheit?

A. Centigrade, but that is just a guess.

By Mr. Butler:

Q. Now, is it not looked upon by the authorities, chemical authorities, that the heat is the thing that does it, and that the flaming arc is merely a means of heating the air to a high temperature, the formation of these substances, the NO2, and then that takes on the oxygen from the air, makes simply a chemical change, isn't that true?

A. I am not familiar enough on this subject to pass a definite opinion; I have read that, though, by leading writers.

Q. That is your understanding of it, isn't it?

A. I have never given it serious consideration.

Q. Now, is there any other product except the NO from the heat which takes on the NO2, which takes on the other O and makes it NO, from the air?

A. Any other form, you mean?

Q. Yes, when does it begin, at what temperature does it begin to take the oxygen from the air after the NO is made?

A. I do not know.

Q. Isn't it 630? A. I don't know.

Q. Now, have you any views at all as to whether N2O3 exists as a gas, I mean, now, as a compound?

A. As a definite compound?

Q. N2O3, what do they call that? A. Nitrogen.

Q. Trioxid whether it exists as a compound gas?

A. Well, that is a much disputed point in the very latest literature.

Q. You don't know? A. I don't know.

Q. You do know? A. I do not know.

Q. Well, I was going to ask you another, you did know what I thought you did. You do know, do you not, that it does exist as a bluish liquid. A. I believe it does.

Q. Well, that is well known and conceded by everybody?

A. That is conceded by everybody.

Q. Without the realms of dispute. You never assumed
2311 in your study of bleached flour that N2O3 did the bleaching?

A. Not before I published my bulletin it never occurred to me.

Q. Well, neither in your work and investigations yet have you ever at any time assumed it? A. Yes, I have.

Q. You have, when?

A. More recently it seemed more probable.

Q. When? A. Oh, in the past six months.

Q. More recently than that?

A. Well, up to the present time.

Q. Have you ever expressed the professional opinion, scientific opinion that it does?

A. I don't think I have ever expressed an opinion on that subject.

Q. But you have always expressed the opinion and all your writings are on the assumption that flour, your view, that NO2 did it?

A. I expect that, yes, all my publications on the subject appeared before it occurred to me to consider the other.

Q. And believed it, didn't you? A. I believe it now.

Q. Yes.

A. No, I am very much in doubt whether this is N2O3 in any way there, or whether it is NO2 that does.

Q. Does it make any difference, they are both poison?

A. There are two compounds.

Q. They are both poisons, aren't they?

A. Oh, I presume they are very similar, the two compounds.

By the Court:

Q. I say, are they poisons? A. I don't know.

By Mr. Butler:

Q. Well, you know that NO is, you told us that yesterday didn't you? A. That I assumed it was, yes.

Q. And you think that N2O3 is? A. I think so.

Q. And you think that nitric acid?

A. It would be about the same.

Q. And you think it is poisonous, don't you?

A. I have not qualified.

Q. Now any chemist knows substances that are poisonous, any chemical mineral acids?

A. If taken in sufficient concentration.

Q. Yes, of course, if there is enough of it, it is a poisonous substance. If you take enough, it will kill, if you take a
2312 little less, it makes you sick, and so forth?
A. If you take enough it will kill, expect that.
Q. So all of these oxids of nitrogen, no matter what form, they may?
A. Laughing gas administered by dentists, that is N2O, nitrous oxid—
Q. That is not? A. Not considered poisonous.
Q. That is simply an anesthetic? Yes, that knocks you out in about a second? A. Well, it puts you to sleep.
Q. It would not be very good to use with your bread all the time? A. You mean, eat the gas?
Q. Well, inhale it then with air?
A. I don't know what effect small quantities would have, I have no idea.
Q. You have not qualified as a toxicologist?
A. Not at all.
Q. Now then do you feel well enough qualified to defend your statement that N2O is not a poison?
A. No, I would not defend, I would not think of defending it.
Q. Now are you well enough qualified as a toxicologist to say that N2O, the laughing gas, which knocks you down like an anesthetic, is not well known to be a very dangerous poison?
A. Well, I did not mean to state that it was well known that it did not, but it was an exception to those compounds of which you are speaking, the trioxide and peroxide.
Q. You told us all of these are poison, I understood you to say that laughing gas was not?
A. It was different if we inhale it in different quantities.
Q. Do you say it is not a poison?
A. I am not qualified as a toxicologist at all.
Q. If you expressed the opinion here on this record that laughing gas is not a poison; do you want to withdraw it or defend it? A. I want to defend it.
Q. What is that?
A. It can be withdrawn. I would be glad to have all questions in regard to toxicological subjects withdrawn.
Q. I don't want you to qualify as a toxicologist but still—
A. I am merely qualified as a chemist.
2313 Q. And then decline to be one when your answers would be my way.

Mr. Elliott: I think this witness has been very fair.

Mr. Butler: So do I, sir.

The Court: Lets get along.

Mr. Butler: I think that is all.

Redirect Examination

By Mr. Elliott:

Q. Dr. Alway, I want to ask you, in order that we may have an understanding of the situation, we have been speaking here of so many parts per million of nitrite reacting material, and as I understand it, the figures that have been quoted you from your book or pamphlet or bulletin rather, those figures are given in terms of sodium nitrite, is that correct?

A. They are.

Q. Now to put these figures on the same basis as we have been using here in this trial, what would be necessary?

A. Divide by five in all cases, make nitrous nitrogen.

Q. That is take the case that Mr. Butler put to you of that baker's flour containing 27½ parts per million, how much would that be as nitrite reacting material?

A. It would be about five and one-half nitrite nitrogen.

Q. I want to ask you whether that baker's flour was bleached at your request by the baker or the miller?

A. Yes, it was bleached at my request; all the bakers grades were bleached at my request.

Q. Now, have you made any experiments yourself, Prof. Alway, of exposing flour to air to ascertain if it would take up nitrite reacting material from the air?

Mr. Butler: I think that is not redirect.

The Court: Well, go on.

A. None except in Kansas City.

Q. Now, well I will say prior to coming to Kansas City?

A. Oh, I had one sample setting out doors in the window ledge, but that is only one.

Q. Now in these flours that you stored in your laboratory?

A. They were in the store room; we do not keep flour
2314 often in the laboratory.

Q. Now these flours, were they loose or exposed or otherwise?

A. They were in very heavy paper sacks, made very heavy at my request, inside of cotton sacks, and the hole was tied up at the top with a strong twine.

Q. Now you were asked and gave some answers to Mr. Butler with reference to the action of 500 cubic centimeters and 1,000 cubic centimeters of peroxide of nitrogen darkening the flour and ruining it, and so forth. Can you give us in a general way to what extent of over-treatment of flour that would represent as compared with treating flour with this Alsop process in the manner in which we have had it testified here?

A. Well, taking this sample that is seized, I would say it was like running it through 50 times.

Q. Something like running it through fifty times?

A. Fifty to a hundred times, yes, through the agitator that many times, assuming it took up oxides nitrogen every time to the same extent.

Q. That flour, as I understand it, was ruined as a flour?

A. Oh, yes, ruined.

Q. Now you were also asked as to getting some increase in the acidity in flour, and I will ask you how that was done?

A. Well, that was where I used very large quantities of peroxide, the same as where I get the color to darken and all the other properties to change.

Q. This is where you use very large quantities?

A. Extremely large quantities, yes, sir.

Q. Now I want to ask you if you will kindly read the whole paragraph containing the statement which Mr. Butler put to you yesterday as to aging, if you have it?

A. The statement made in the address at the millers' banquet?

Q. Yes, just read that paragraph.

Mr. Butler: I would like to see it, if your Honor please.

A. I am reading from my manuscript.

The Court: How long a statement is it?

Mr. Elliott: It is a short statement.

2315 The Court: Go on.

Mr. Butler: Unless it relates to the subject matter, that which I read, it may be some advertisement, I don't know.

The Court: Go on.

A. (Reading) "It is necessary to recognize in view of what knowledge we have that it is nonsense to speak of bleaching flour by means of nitrogen peroxide as aerating or aging or purifying. I can easily conceive of the natural whitening or bleaching of flour being due to nitrogen peroxide or nitrous acid, but many other explanations are as probable or even much more probable."

Mr. Butler: Go on, read the rest of it.

Mr. Elliott: That is the whole thing.

Mr. Butler: Read the rest and the connection and complete it.

By Mr. Elliott:

Q. Is that the whole paragraph?

A. That is the whole paragraph.

Mr. Butler: That does not include what I read.

A. What you read as I remember began in the middle of the sentence.

The Court: If it does not, it can be brought out on recross examination. Go on, Mr. Elliott.

By Mr. Elliott:

Q. I will ask you, Prof. Alway, if at the time you made this statement which you have quoted, you were aware of the existence of nitrous acid or peroxide of nitrogen in the air?

A. No I was not.

Counsel for Libelant objects to the question as immaterial and irrelevant.

The Court: He may answer.

A. No, I was not aware of it.

Q. I understood you to say in answer to a question from Mr. Butler that the talk of aging flour by bleaching was nonsense, I will ask you in what sense you used the word "aging"?

Objected to as immaterial and irrelevant.

The Court: Well, he may answer.

A. I was using it there in the sense in which it is commonly used, allowing lapse of time for the flour becoming older or whatever it is; what I am arguing for was for the substi-
2316 tution of the term bleaching everywhere—

Mr. Butler: I object to what he was arguing.

The Court: That is not an answer.

Q. Did you complete your answer, Mr. Alway?

A. Yes, sir.

Q. Now what was the age of the flour that you used in making experiments recorded in your bulletin?

A. Most of them were made from wheats about six months old, and the flour about a month or two months after milling, the most had not been—

The Court: Now that is an answer; what's the use of going on with a diatribe?

A. I said most of them, I was giving the other—

The Court: All right.

A. The flour of which we had the larger sample used for stock experiments, had been harvested a year and a half before and had been milled just about six months before.

Q. Have you made any experiments or observations to determine if the bleaching of flour, especially new wheat flour, imparts to it the qualities of the natural aged flour?

A. I made no—

Mr. Butler: I object to that as not redirect.

The Court: He may answer.

A. I have made none.

Q. Are you familiar with differences between the new flour and the naturally aged flour?

Mr. Butler: I object to that as cross-examination of their own witness.

The Court: It certainly is, but he may answer.

A. I am not.

Q. Can you yourself distinguish between a new flour and a naturally aged flour? A. I could not.

Q. Did you ever do any baking, Prof. Alway?

A. I never did.

Q. Did you ever make any flour into dough for baking?

Mr. Butler: I object to that as calculated to discredit the statement of their own witness; he came here and says this claim of aging is nonsense.

The Court: Sustained the objection.

Q. I will ask you if in your answer to Mr. Butler referred to above as to aging, you intend to commit yourself to
2317 the view that bleaching by the Alsop process can not impart to flour the qualities that are obtained by natural aging?

A. I did not intend to commit myself to any expression of opinion on that point.

By the Court:

Q. You have no opinion? A. I have no opinion.

Mr. Butler: He just thinks it is nonsense, that is all, used the term.

By Mr. Elliott:

Q. Dr. Alway, I will ask you if in your judgment there are any compounds in flour which by the addition of nitrous acid or nitric acid in the concentration that would be present when flour is bleached by this Alsop process, that would produce nitroso or diazo compounds? A. There are not.

Q. Dealing with the flour in suit I want to ask you if in your opinion here are any nitro nitroso diazo or Xantho protein compounds in this flour?

A. In my opinion there are not.

Q. Now you were asked in reference to the experiment performed by Dr. Hulett with bread and some liquid. Will ordinary yeast bread, made from either bleached or unbleached flour, and giving a reaction for nitrites, give the same reaction with the water removed from the bread in any other way?

Mr. Butler: I object to that as not redirect and opens up a new subject and will take us off into the realm of yeast and saltpetre of which this witness has not yet treated.

The Court sustained the objection.

Q. Assuming the reaction, does such a reaction in your judgment necessitate the presence of free nitrous acid as such in the original bread? A. No.

Q. Please give your reasons for that conclusion?

A. There are always organic acids present in the bread, and the nitrite in contact with the organic acid moisture, under reduced pressure, liberates the oxids of nitrogen, they passing into the water or with water would give the nitrite reaction.

Q. I ask you if in your judgment such an experiment would be conclusive proof that this bread would contain free nitrous acid?

Mr. Butler: I object to that as asking this witness to pass upon the credibility of other testimony in the case.

2318 The Court: Well, he may answer.

A. I would not.

Q. Please give your reasons for that opinion, Prof. Alway?

A. Why, as I said before, the organic—

Q. Oh, that is the same—well, all right. What action takes place when free nitrous acid is heated say near to the boiling point of water? A. It decomposes.

Q. What is the temperature in bread making?

Mr. Butler: Objected to as not redirect, not an expert, not a baker.

Q. Do you know the temperature?

The Court: He may answer.

Q. In bread making, if you do.

A. A little below the boiling water, a little below 212 Fahrenheit.

Q. Just one other question. Are mineral nitrites as found in water and naturally in plant tissue destroyed by heat?

A. They are not.

Q. That is all.

Recross-Examination

By Mr. Butler:

Q. What is the baking temperature?

A. The temperature of the oven, or the temperature inside of the loaf, you mean?

Q. I don't care which; give them both.

A. Oh, about 400 to 500 fahrenheit, the baking temperature.

Q. The boiling point is 212?

A. Yes, well, that is the loaf temperature inside.

By Mr. Elliott:

Q. I did forget one question, I will give it to you, it is there, I had it on another page and I overlooked it. I want to ask you, are these diazo-compounds stable or unstable?

A. Very unstable, broke up very easily.

Q. And as to nitro starch, is that a powerful explo-
2319 sive? A. It is a powerful explosive.

Q. That is all.

By Mr. Butler: (resuming).

Q. Now when did you first find out there was nitrogen peroxide or nitrous acid in the air?

A. Regularly, I think when I came down here. I think Dr. Marshall—

Q. When did you make this speech a quotation from which you read in redirect examination?

A. January 29, 1908.

Q. What do you mean by the natural whitening of flour?

A. The loss of color of starch.

Q. The loss of color on starch. In that speech some year or two before you knew there was any nitrous acid or nitrogen peroxide in the air, you used this expression: "I can easily conceive of the natural whitening or bleaching of flour being due to nitrogen peroxide and nitrous acid." Now where do you think that nitrogen peroxide or nitrous acid would come from on the natural bleaching.

A. It came from the electric storms or combustion anywhere, not exactly an essential constituent, it might be possible.

Q. Now you say you then meant that this natural whitening was due to nitrogen peroxide; that is, you said you could conceive of it?

A. I could conceive of it.

Q. That is, think of it? A. Yes, sir.

Q. And the nitrous acid, you did not mean the nitrous acid or nitrogen peroxide in the air then; you did not because you didn't know there was any in the air then?

A. I did not know there was any there, no sir.

Q. Now storing in a warehouse, you knew it would whiten it?

A. I didn't know that, I accept that though, as a matter of knowledge.

Q. I know, but that is what you were talking about?

A. Yes, sir.

Q. Now where did you think that that natural whitening would come from in the winter time?

A. In the winter time?

Q. Yes, when it is froze up and we don't have any lightning?

A. Well, I don't remember where I would imagine at that time where it came from. It came from thunder storms,
2320 as I say, and came from combustion and plants everywhere.

Q. It would not come from thunder storms in Nebraska in January and February?

A. No, it would not come from thunder storms.

Q. Well, where would it come from; it would be in the air, wouldn't it, if at all?

A. It had to be in the air to get in contact with the flour.

Q. Now let me see about this— A. Yes.

Q. You stated then that this natural aging, this artificial aging being the equivalent of natural aging, in substance, was nonsense?

A. I speak of it as that.

Q. Yes, perfect nonsense?

A. Yes, sir, I speak of it as that.

Q. Then you begin to tell us in order to pull down the effect of that, in your redirect you were asked when you found out there was nitrogen peroxide in the air, and you said since this trial, or something like that, and now you say that when you made this speech in the very sentence in which you said it was nonsense, you said that it could be thought of?

A. Yes.

Q. Can easily conceive of it? A. Yes.

Q. Natural whitening or bleaching of flour being due to nitrogen peroxide or nitrous acid. Now having heard that, is it not true, are you not reminded that it is true that you did know that there were trace of nitrites.

A. I know there were traces of nitrites? I put that in the bulletin about traces of nitrites.

Q. In the air?

A. Oh, yes; I gave that considerable length in the bulletin, not nitrites but nitrogen peroxide.

Q. Do you know there is nitrogen peroxide in the air yet?

A. Well, I accept it from Dr. Marshall's testimony and the others.

Q. So your explanation—

A. It would not absorb a nitrite through paper.

Q. So this whole thing is a difference between NO2 and nitrous acid and nitrogen peroxide, is it?

A. Which, here?

Q. Yes, your whole explanation then, of this nonsense that it distinguishes between nitrogen peroxide and nitrous acid and the nitrites in the air, you knew there were nitrites in the air? A. Yes.

2321 Q. All the time? A. Oh, yes.

Q. And you know that it was by means of the nitrites either immediately or directly that it could be thought of that aging took place?

A. Oh no, not nitrites, it would have to be in the form of NO2 for that.

Q. Did you ever see any free nitrous acid?

A. Oh no—Oh, free nitrous acid?

Q. Yes, sir.

A. Well, we speak of it as being free in solution.

Q. I am not asking about how you speak of it. I am asking you now with scientific accuracy if you ever saw free nitrous acid?

A. I saw it in solution, yes.

Q. Is it free when in solution?

A. Free but not solid.

Q. There is no such thing?

A. I don't know it as a solid compound.

Q. So then what you meant in your answer to Mr. Elliott was, you never knew there was nitrous acid in solution floating around in the air, is that it?

A. Yes, nitrogen peroxide there.

Q. Now as a chemist you know, do you know, that there were nitrites or traces of nitrites, one-fourth of a part to the billion, something of that sort, in the air?

A. At that time, yes, I know there was nitrites, observed —knew nitrites since I have been a chemist.

Q. And you know they came from NO2?

A. No, we did not know where it came from but knew of it.

Q. Didn't you say the flaming arc, lightning storm produced NO2?

A. Oh, no, I do know it forms in the evaporation of water.

Q. It forms directly, you knew the lightning form NO2?

A. Yes, I expect.

Q. You knew there was ammonia in the air?

A. Yes, sir.

Q. And you knew there was more than enough ammonia to take up all the NO2 that could be formed?

A. I never calculated that.

Q. You knew that? A. I presume that.

Q. You knew the ammonium nitrite is a most harmless innocent nitrite, don't you? A. Yes.

Q. You know that perfectly, don't you? A. Oh, yes.

2322 Q. And you know it is a perfect humbug to compare that kind of a nitrite with some of these poisonous nitrites that you describe as making men afraid, don't you?

A. No, the kind of ammonium nitrite I would expect to be the same thing as the NO2, the same as in the other.

Q. But the proportion is very little?

A. The proportion in the air.

Q. The ammonium nitrite is considered innocent, isn't it; that does not give you vertigo and knock you out in the way you describe these nitrites in the flour?

A. I would expect it to follow just as much from the sodium nitrite.

Q. You would? A. Just as much.

Q. Will ammonium nitrite bleach flour?

A. I would not expect it, no.

Q. Well, you know it won't don't you?

A. No, I have no idea but I would not expect it would at all.

Q. You are just as sure of it as you are you are sitting there?

A. I am fully satisfied of it.

Q. Wouldn't have any tendency to bleach flour at all?

A. Would not be considered to have any tendency to bleach flour.

Q. And it is the ammonium nitrite that is formed in the air just like that which sends the lightning, springs and stroke that makes the NO2? A. Well, no, I would not think of that.

Q. Well, before it gets down, before it gets to the ground, and you will tell this jury that you know that ammonium nitrite does not bleach flour, don't you?

A. No, I don't know anything about that; I never tried it.

Q. But without trying it, you know that, don't you?

A. I don't know it, no, but I accept it.

Q. You believe it, don't you?

A. That is my opinion of it, yes.

2323 The Court: By way of supplement and modification of what I made of record yesterday, owing to the conference in court this morning between counsel on both sides, before the jury appeared, and before there was a stenographer, there will be no more millers called as witnesses on the part of the claimant, there will be no more bakers baking either commercially or experimentally, called by the claimant. I was in error yesterday as to the number of scientists, I should never have allowed the government to have quite as many, but having allowed it, for the purpose of treating both sides as nearly equal as I know how to treat them the claimant or defendant will be allowed to call four scientists, if he so elects, in addition to what have been called and by scientists I mean physicians or chemists, or scientists undertaking to qualify in

any other form, and four only. I do this because I presume that each side can call innumerably large numbers here upon the respective sides, and I think this matter must come to an end. You call your next witness as a scientist.

Dr. Ralph W. Webster, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Q. Give your full name, Dr. Webster?

A. Ralph W. Webster.

Q. Where do you reside? A. Chicago.

Q. Will you state your qualifications?

A. I am a graduate of the University of Chicago in
2324 1895. Graduated from the Rush Medical College in 1898; then went to the University of Chicago and studied for the doctor of philosophy degree which I received in 1901; during these periods I was fellow in chemistry in Rush Medical College and fellow in physiology at the University of Chicago; later I became assistant in physiological chemistry and pharmacology at the University of Chicago, and then became instructor in pharmacology. In 1903 and 1904 I was abroad in the laboratories in Vienna, and in Berlin, and Frankfort, and am now professor of pharmaceutical therapeutics in Rush Medical College, and am devoting my time to the practice of medicine as well as to specializing in physiological chemistry and toxicology.

Q. Have you made any examinations of bleached flour as to acid content? A. I have.

Q. I will ask you if as a result of your investigations you are able to say whether there are any free nitrous or nitric acids in flour bleached by this Alsop process?

A. My opinion is that there are absolutely no traces of free nitrous or nitric acid, in bleached flour.

Q. What test, if any, did you employ to make this determination?

A. Tests were made, there was one similar to that stated by Prof. Alway, namely, the reaction with diamethyl amino azo benzol, which detects the presence of a mineral acid whether it be nitric or nitrous.

Q. What is the action of nitrous and nitric acid on protein?

A. The action of nitrous and nitric acid upon protein material depends upon many factors, depends upon the concentration, depends upon the temperature, depends upon the amount of flour, as regards the amount of nitric acid, and depends upon the conditions of the flour so treated. The usual action upon the protein material, as I see it, of nitrous acid, is the

abolition of nitrogen which has and can have only one meaning, namely the action of the nitrous acid upon the amino groups, forming hydroxyl compounds. There are other actions which take a great deal of time to explain in detail.

2325 Q. What is hydrolysis?

A. Hydrolysis from the chemical standpoint is the splitting up or the breaking down of the substance under the influence of acids, of alkalis, of ferments, of heat, and various other agents which results in the splitting up of complex molecules into simpler molecules by the addition of water.

Q. I will ask you from your judgment if any hydrolyses would occur under the influence of nitrous or nitric acid in such quantities as have been assumed to be present in this bleached flour?

A. In my opinion absolutely no hydrolyses would be produced.

Q. I want to ask you to detail the nature of the nitrous acid, what happens when nitrous acid acts on protein?

A. Well, we have the possibility of the formation of many substances, depending upon the concentration. I am answering, would like to answer the question.

Mr. Butler: I think I will object to his enlarging upon possibilities.

The Court: Please answer the question.

A. The effect is variable.

Q. Now we have had some testimony here as to the formation, or the possibility of the formation of diazo and nitroso and nitro compounds in flour, or bodies perhaps I should say. Now assuming that hydrolysis would occur in your judgment, would the amino acids be changed into diazo bodies, or nitroso or nitro bodies, by the action of nitrous acid in the concentration assumed to be present?

Mr. Butler: We object to that. There is no foundation laid for his qualification; he is not an organic chemist, but he is a toxicologist and physiologist chemist.

The Court: He may answer.

A. My opinion is they would not.

Q. What is sodium nitrite, doctor?

A. Sodium nitrite is a combination of the metal sodium and the original NO2, it is a salt, of nitrous acid.

Q. Is it found in any of the organs of the body?

A. Yes, it is found in many.

2326 Q. If so, which ones.

Q. It is found in many of the organs of the body?

Mr. Butler: I object to that as immaterial and irrelevant.

The Court: Well, go on, Mr. Elliott. There are a great many things here that are not in controversy, I take it, what is the use of every time we get a scientist on the stand to have a lecture and address from him in some of these sciences. If it is not in controversy why does he have to go on and give us a description of that? Is that in controversy?

Judge Scarritt: We assume it is.

The Court: Mr. Elliott.

Mr. Elliott: I simply want to lay the foundation for his opinion.

The Court: Go on and do it, it seems to me like a frivolity, but may be I am mistaken.

A. Sodium nitrite is found in various organs. It has been shown definitely to be present in the white matter of the brain, in the lungs, in the bronchical tubes, in the lymphatic glands, the cervical glands, the various maxillary glands, and other fluids of the body, especially the saliva.

Q. I will ask you if in your judgment a medicinal dose of sodium nitrite distributed over a year, can produce harmful effects on the body.

A. I should say not.

Q. Have you given sodium nitrites to any person to determine the action on blood? A. I have.

Q. In what quantities and to whom did you give it?

A. I have taken two grains myself; have given it to four other people, and have tested the blood for the presence of methemoglobin and have been able to demonstrate there is no methemoglobin present.

Q. What means did you employ to determine the question of the presence or absence of methemoglobin?

A. My method was the use of the micro-spectroscope which will detect the presence of hemoglobin from one blood corpuscle.

Q. I will ask you if in your judgment the system has any means of dealing with nitrites taken into it?

A. The system has several means of handling nitrites
2327 which may be taken into it.

Q. Will you kindly name them.

A. One means by which the nitrites are taken care of is the oxidyzation to nitrites; the second means is the action of denitrifying bacteria; the third means is the action of urea upon nitrous acid.

Q. Is urea an amino compound?

A. Yes, it contains two amino groups, yes, sir.

Q. Well, I might ask you what is urea?

A. Well, urea is a compound consisting of two amino groups liked to CO. It is formed by breaking down of protein, of the several of products protein; it is formed in many tissues of the body, found in various organs, etc.

Q. Now, how does urea act, if you know, in destroying nitrites?

A. The urea in the presence of acid and nitrites will decompose the nitrous acid, form by the action of the acid upon the nitrite later on nitrogen carbon dioxid in water, and the urea would thus be absolutely decomposed, at the same time the nitrite is decomposed.

Q. Have you made any experiments to determine whether nitrites are destroyed in the presence of urea?

A. Yes, I have.

Q. Please relate what they were?

A. I have taken a solution of sodium nitrite of definite strength, have added hydrochlorid acid, dilute hydrochloric acid.

Q. Now start over again.

A. Taking a dilute solution of sodium nitrite and added dilute hydrochloric acid and applied the Griess reagent. In the presence of nitrites or nitrous acid the Griess re-agent reacts, showing, giving the characteristic red color. If to this solution urea be added, and the Griess reagent applied, we get absolutely no reaction with the Griess reagent.

Q. Have you exhibits resulting from that?

A. Yes, sir.

Q. Will you please produce them?

A. This is a solution of—

Q. Let me have those labeled first. (The exhibits were respectively marked by the stenographer "Claimant's Exhibits 278 and 279)." Now will you please first tell us what "Exhibit 278" is, and then what "279" is?

A. "Exhibit 278" is a dilute sodium nitrite solution treated with hydrochloric acid and Griess reagent, giving the
2328 characteristic pink coloration. This color has slightly faded since the test was made yesterday, but still proceeds. The "Exhibit 279" is the same solution with urea added and the Griess reagent also added, showing that there is absolutely no reaction for the presence of free nitrous acid or of nitrites; they have been decomposed by the presence of urea.

Mr. Elliott: I introduce these in evidence.

Witness: I have further experiments.

The Court: Don't be volunteering any address here to us.

Q. In your judgment do nitrites or nitrite reacting material disappear through the process of digestion?

A. Yes, sir.

Q. What experiments, if any, have you performed in this regard?

[—] I have taken the bleached flour in suit and have made suspensions in water and have treated it with both the pepsin hydrochloric acid and with the pancreatic digestive fluids, and have allowed the fluids to act in the incubator at different temperatures for varying periods of time. I have been able to show that—

Mr. Butler: I object to what he is able to show, what he did and saw.

The Court: What he is able to show is simply an argument. Sustained.

A. It does show that during the digestion the nitrite reacting material absolutely disappeared in the course of half an hour under the influence of the pepsin hydrochloric acid. Under the influence of the pancreatic fluid the action was somewhat slower and had not disappeared at the end of an hour and a quarter. It disappeared, however, by allowing it to stand, I couldn't say the exact time at which it disappeared because I left it over night, the reaction at the time was not such that I could observe it at the point but it had not disappeared in the hour and a quarter under the influence of pepsin or of the pancreatic extract.

Q. I will ask you, doctor, to give us your definition of a poison?

The Court: Proceed.

A. I am trying to formulate my idea.

By the Court:

Q. Don't you know.

2329 A. I have a notion I do but I want to get a definite statement. A poison is a known organized substance, it may be either organic or inorganic, which may be introduced into the body or may be formed within the body, which owing to its chemical properties exerts either a harmful influence or exerts influence sufficient to cause death.

Q. Is there any substance known in your opinion that is inherently a poison in all dosages?

A. I know of no such substances.

Q. Are many so-called poisons widely used by the medical profession as remedial agents?

Mr. Butler: I object to that.

The Court: I suppose everybody knows they are, but give us the benefit of your learning.

A. They are.

By Mr. Elliott:

Q. Will you kindly name some of them?

Mr. Butler: I object to that as immaterial and irrelevant.

The Court: It seems to me that is wholly commonplace, but go on, strychnine, arsenic and so on, name the balance of them.

A. Corrosive sublimate, aconite, among others that I might name, prussic acid.

Q. Is nitric acid ever used medicinally? A. Yes, sir.

Q. Is nitro-hydrochloric acid ever so used? A. Yes, sir.

Q. I will ask you doctor, if in your judgment, chemical reactions with the test tube are the same as these occurring in the blood within the body?

A. They are not comparable in many respects.

Q. Assuming that the flour in suit was bleached by the Alsop process and as a result of such bleaching said flour contains 1.8 parts per million of nitrite reacting material, and assume that in the baking process none of that material disappears, I will ask you your opinion as to whether the constant daily eating of such bread or bread made from such flour could, in your judgment, be harmful to the health or deleterious?

A. In my judgment it could not.

Q. Now on the assumption of the last question I will ask you if in your opinion such an amount could have any [appediable] effect of any kind upon the system?

2330 A. None other than the effect produced by the unbleached flour, the effect would be comparable to that of unbleached flour.

Q. Well, I mean on the basis of the nitrite contents?

A. No, there would be no effect of any sort that I could conceive of.

Cross-Examination

By Mr. Butler:

Q. Doctor, are you an organic chemist?

A. No, not as such.

Q. Is there such a thing as an organic chemist who is not an organic chemist as such?

A. Quite a number, I think there is quite a number of organic chemists that are not—quite a number of men that are in different branches of organic chemistry that do not profess to be organic chemists as such.

Q. You are one of them?
A. I am simply in that phase of organic chemistry that deals with physiological chemistry.
Q. Does physiological chemistry have to do with flour?
A. Yes, it has to do with the action of flour in great detail.
Q. Does physiological chemistry have to do with flour?
A. Yes, sir.
Q. Why didn't you answer that way first instead of saying it has to do with the action of flour?

Counsel for the claimant objected to the argument with the witness.

Mr. Butler: He was trying to avoid me.

The Court: You may answer.

Q. Why didn't you answer that way at first instead of saying it has to do with the action of flour. Now flour and the action of flour are two different things, scientifically, are they not?
A. They are as a matter of fact different things; I was simply trying to explain why the physiological chemistry had to do with flour but does not have to do with the bleaching of flour, but has to do with its action. I could not answer any other way.
Q. Anything to do with the milling of flour?
A. Everything.
Q. Or the analysis of flour?
A. In a sense, the analysis of flour, yes.
2331 Q. In what sense?
A. Why, flour comes under the head of food; physiological chemistry has to do with foods, their action in the system.
Q. Physiological chemist is a food chemist?
A. No, not in that sense, not in the sense of direct food chemist.
Q. Physiological means the action of our organs, that is all?
A. Yes, sir.
Q. You have to do with that, don't you? A. Yes, sir.
Q. That is your profession? A. Yes.
Q. You don't have to do with the inspection of foods?
A. No.
Q. Or the analysis of foods?
A. Oh, yes, I make quite a number of analyses of foods.
Q. Is that your profession?
A. Why, it is a portion of it.
Q. And you have to do with the value of foods upon people?
A. Yes, sir.

Q. And you have to consider whether or not poisonous substances are good for people to eat with their foods?

A. Oh, yes.

Q. What have you determined about that?

A. I know in general the kind of the various principles in food; I have done quite a number of experiments. I have done considerable work on the amount of—

The Court: He didn't ask you for that.

Q. I ask you whether you reached any conclusion as to whether poisonous substances in food are good things or bad things? A. Yes, I reached a conclusion.

Q. What is your conclusion?

A. My conclusion is that poisonous substances are bad under certain conditions and harmless under others.

Q. Generally never good?

A. It depends on the amount present.

Q. Now you think it is all right to leave it to the baker, grocer, the millers and all the persons who prepare foods for human consumption the right, if they see fit, to add minute substances, which if added in larger quantities, or large substances, would be harmful.

Counsel for claimant objected to the question as calling for the wrongful conclusion of the witness.

2332 The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. That would depend in my opinion entirely on whether the substances so used would have any deleterious effect in the amount present.

Q. Then let us take formaldehyd in milk?

Counsel for claimant objected as having nothing to do with the case.

The Court: He may answer.

Q. Would you approve from the standpoint of health of the addition of formaldehyd to milk?

Same objection.

A. It depends entirely on how much I could add or how much was added.

Q. Not enough to show symptoms of poisoning your baby who drank the milk or to the most delicate person: I want you to be perfectly fair with me, because I want you placed upon

this food question. Now let me be perfectly fair, formaldehyd in large quantities is poison, isn't it? A. Yes, sir.

Q. Now then formaldehyd—it is an embalming fluid, isn't it? A. It is so used.

Q. It is used as a preservative on milk, for milk, isn't it?

A. Yes, sir.

Q. And cream, now then we will assume that the milkman for the purpose of making his cream or milk stand up a little longer, it is artificial aging he will call it for short, put in a little formaldehyd but so small an amount that the most feeble person in the community might take the milk in ordinary consumption as milk is consumed and that no doctor whether skilled or pharmacologist or toxicologist could observe any harmful effects on the public or the person, whoever it was, from the formaldehyd, in such case from the standpoint of health would you approve or would you disapprove of the addition of the formaldehyd, am I right?

Same objection by claimant.

2333 Q. Am I right about that?

A. I would not disapprove of it if it would produce absolutely no effects such as you assume.

Q. Well, I mean no observable effects?

A. Well, no observable effects and I mean when I answer that question, I mean effects which could be demonstrated, I don't mean your observable effects—

Q. I mean observable to those who know how to look and observe? A. I should say it was not deleterious.

Q. All right, and so it would be all right to add these poisonous nitrites to baby's bread, if they were so minute in quantity, Dr. Webster, that the most skilful observers in your line would not observe any nitrite sign or symptom from the use of the nitrites in the bread?

A. Well, assuming that the nitrites are added and they are present in the small quantities—

Q. They are added and they are present?

A. In minute quantities I should say that it would be perfectly justifiable to give it to children.

Q. Yes. Well, now, let us take an ordinary breakfast for an ordinary wayfaring lawyer, and we will assume that he orders some oatmeal with cream; there is a little formaldehyd in that, not enough to show any signs at all; that would be all right in your opinion, would it?

A. It depends on the amount.

Q. Well, I mean there isn't enough in connection to show any signs on the lawyer; we are assuming now that the lawyer is off trying a law suit, and he is getting these things to eat, and there is not enough so that all of the pharmacologists and the

toxicologists here in court could not observe any nitrite symptom on the man, so you would say then that there was no poison added, and it would be all right to add it from the standpoint of health as an advisor touching our health?

A. I remarked before that I thought it would with regard to milk.

Q. All right. Now we'll say that he orders some wheat cakes with some syrup and butter, that wheat cakes are [mak] out of nitrite bearing poisonous nitrites from bleached flour, also have some nitrites added by the bleaching process, and some sulphates added in the syrup and borax and coal tar in the butter to cover it. Now these are things that you
2334 know have been used, do you not, in wheat cakes, with syrup and butter, nitrites the bleached flour, the nitrites of the bleached flour, the sulphate, borax and the coal tar in the butter, you know they are used for preservation, and no one of them can be characterized in and of itself per se as a poisonous substance. A. Not that I am aware of.

Q. In a large quantity, in a sufficient quantity it is, is it not? A. Yes.

Q. Now we have the formaldehyd in our milk and cream, what do you say about nitrites, sulphates, borax and coal tar dye, that are in wheat cakes and syrup?

Same objection by claimant.

Q. That is, the quantity of each being so minute that the greatest chemist and analyst and pharmacologist and toxicologist ever known could not observe any injurious effect upon the lawyer who is having the breakfast, would you say from the standpoint of advising as to health that that was proper to add these things to the pancakes and syrup and butter?

A. Well, I can't answer that yes or no.

Q. Do you want to make a speech about it?

A. No, I don't want to make a speech.

Q. Well, let us have your answer? A. Yes and no.

Q. Yes and no, well which one would you put out and which one would you put in?

A. I would answer it yes and no. I could not answer it either way. I simply cannot answer it without explaining. If I say yes, I must explain; if I say no, I must explain.

Q. Well, go on and explain, let's get through with it?

A. My idea is that if these substances are small enough in amount, it makes no difference if you take forty, you may have the possibility quite as marked that you may get one offsetting the action of another as you may get the effect of one accelerating the amount of another, and no one can say without trying it. The effects of borax have been tried and disputed the world over. The effects of benzois acid have been

tried and have been disputed, and we have all of these poisons in small amounts and no two bodies examined them who have agreed on them.

2335 Q. Now I gather from your views that if the amounts be small enough it would be all right?

A. That is my view.

Q. Yes, all right. Well, now, we will suppose he ordered some bacon and eggs, and there were some nitrites and nitrates in the bacon and eggs too, still so small an amount that on a law suit to condemn the bacon and eggs every honest doctor could swear no poison added, would you still swear that it would be all right?

A. I would say it would make no difference how much nitrate you added in the case within limits.

Q. Or nitrites? A. Yes, sir.

Q. It would not make any difference how much?

A. Well, within limits, I am speaking about the same limits.

Q. Now he ordered some coffee with sugar we'll say, and a little lead chromate to make the coffee look good, I think it is bleached with formaldehyd, sulphur dioxid. Now do you think that the coffee and cream with the lead chromate and formaldehyd, if we have formaldehyd in the cream, and the nitrates and nitrites, and sulphates and borax and coal tar dye in our pancake, and bacon and eggs, more nitrites and nitrates, now if we come to the coffee and add a little lead chromate, so minute that every toxicologist from Rush Medical College and ever other reputable scientist should say it was so minute that it was no poison, do you still approve from the standpoint of health of adding that thing for food?

Same objection by claimant.

The Court: Go on and answer.

Q. Well you can keep on that way.

Q. No, I am going to keep on, you need not worry about that, I am going to keep on for the whole day?

A. I should say that you could add lead chromate in small quantities it would have no effect.

Q. Now what will we do with all the rest of the poison?

A. I am not assuming anything but the coffee.

Q. I am assuming the whole meal; I am taking the whole meal.

The Court: Now he has had the oat meal with cream, and the wheat cakes with butter and syrup, and bacon and

2336 eggs, and we have a little lead chromate in our coffee.

Same objection by claimant.

A. If you use lead chromate in small quantities, and not enough to produce any deleterious effect to be observed by anybody, I should say not.

Q. Then we order a glass of butter milk to clear our throat with for work in court, and a little borax in the buttter milk, not enough to make the lawyer sick or to show there is anything wrong with him on account of the borax; now you think that would be all right in that same breakfast?

Same objection.

Q. Do you say it was not large enough to give him spasms or show any observable effect to the keenest eye of the greatest chemist in your line?

A. I should say that he could not have had such a breakfast; I say that he probably would not have had such a breakfast and so could not have received the substances.

Mr. Butler: I move to strike it out.

Q. This lawyer was foolish enough to take that butter milk for breakfast, I do it often?

A. It would not injure him.

Q. No personal equation entering into that?

A. Certainly is.

Q. You think the personal equation was back of it?

A. I am assuming a large number of things that I have not mentioned in my answer.

Q. Now then add some bread and butter too just there, and some nitrites and nitrates, borax and coal tar dye, in the bread and butter, you think that would be all right and harmless, do you think these thinks were not there in large enough quantities to give a man a spasm or show symptoms?

Same objection.

The Court: He may answer.

To the ruling of the court claimant then and there duly excepted.

Q. Any one item?

A. Large enough to produce spasms or give a man symptoms of what?

2337 Q. Of poisoning, or injury or deleterious action so that it could be observed by the keenest eye of the keenest scientist the world ever knew?

A. My position, Mr. Butler, I would like to explain my position.

Q. No, I want you to answer; I will give you a chance to explain when we get through the whole of it.

Judge Scarritt: He has a right to explain.

The Court: Answer the question.

Witness: I can not answer it, Judge, on the assumptions he is making, so much at one time.

Q. Why, I want to understand, it is if I eat five or six things for breakfast—that is what he is getting at, what he is getting at, a poison in any one of those things is not enough to be harmful, the question is now whether you keep adding these different things for breakfast, we all sometimes do, when he got through with his breakfast, what would he have?

Same objection.

The Court: That is the question as I understand it.

Judge Scarritt: I understand it is on the assumption that the whole thing would not do anybody any harm.

Mr. Butler: Oh, no, the whole, each would not, but we can only condemn one thing in the pure food court at once.

The Court: I understand this, and I have observed this, these scientists some say that strychnine is poison, some say strychnine is not poison excepting as concentrated and in sufficient quantities, and so with other poisons. Now Mr. Butler has commenced with the oat meal and cream with some poison in it but not enough of itself to hurt, and then he takes pan cakes with butter and syrup; then he takes eggs, and he takes bacon, now then, and coffee, now then he finally quits, he finishes all his breakfast, or turns to take some bread and butter, I don't know what else. Now when you get through with an ordinary meal for a healthy man, with a good appetite, the question is what are you going to have when you get through.

2338 Judge Scarritt: I want to make an objection to the question as stated by the court and by the gentleman on the other side, as absolutely irrelevant, incompetent and immaterial to any of the issues in this case, and involves an analysis of every ingredient in every piece of food that has been mentioned, and the action or comparative action of one poison upon another, or one ingredient upon another and is an unfair question and an unfair illustration, as applied to the issues in this case with reference to this bleached flour.

The Court: Objection is overruled.

To which ruling of the court claimant then and there duly excepted.

By Mr. Butler:

Q. Answer. A. I cannot answer yes or no.

Q. Why?

A. Because I would want to know what the effects of the small amounts, infinitesimal amounts, were upon one another. It would be entirely hypothetical in my answer as to whether this or that would be harmful, but assuming that each was not harmful, I could not say whether the things that you have mentioned, what you have mentioned would result in the increased activity of one substance or the combination of effects which might be harmful.

Q. All right, so because you don't know the effect of one poison upon the other, and the harmless upon the poisonous, and the poisonous upon the harmless stuff, you couldn't tell whether it would be safe to take all these things for breakfast or not; is that the idea?

A. Well, I have taken poisons for breakfast.

Mr. Butler: I move to strike that out.

The Court: It will be stricken out.

Judge Scarritt: I object to that.

Q. Now suppose, and let us go a little further, suppose with that same breakfast we had some apricot sauce with sugar, and some sulphites in that, but the sulphites were so minute that if we are condemning and try to condemn it in court as adulterated, that you and every other enlightened gentleman would swear that it was totally harmless and no poison
2339 added, would you say that it would be all right with that breakfast?

Same objection.

A. I make the same answer I have previously made, that I could not answer without some experimental evidence upon which to base my opinion.

Q. Do you think it is safe to give him a breakfast you cannot answer without experimenting with it, don't you think it is better to give him a breakfast you know is safe without experimenting?

Same objection.

A. I do not assume that we have breakfast such as you have.

Q. Well, I ask you to assume it; I do have those breakfasts. [Q.] Would be unable to answer the question by yes or no.

The Court: Answer it any way.

Q. Answer it any way you like so that we can understand just what you are getting at.

A. Well, as I say my opinion is that the action of these minute—of these substances which are harmless may be increased by combination one with another, but as to the effect of such an experiment as you have mentioned, I could not say because I have no definite experimental evidence.

Q. Might it be possible for him to die?

A. I would hardly think it possible, no.

Q. Might create some illness?

A. It might cause symptoms, I don't think it would cause any marked disturbance any more than perhaps might cause gastritis or cause a little irritation of the stomach and bowels, which we get more than any other thing.

Q. Now lets take an ordinary breakfast, and each item in the breakfast contained some nitrites which are poisonous in sufficient quantities are they not?

A. Oh, yes, if you give enough.

Q. Well, in each there was not enough to be poisonous, in each one there was not enough to be poisonous, but there was just up to the danger line, that is where you could conscientiously swear it was safe, but you had four items for breakfast, and each one had nitrites in it, and if we are trying to condemn one or any one of them you could conscientiously
2340 swear that there was no poison in it because it was not enough; now if you had four times that, what would you say?

Objected to by claimant.

Q. Would you recommend that from the standpoint of health?

The Court: That is to say—

Judge Scarritt: We have got a right to make our objections here, your Honor, I would like to do it in the usual way.

The Court: Yes, you have, but you have no right to violate the repeated rules and orders of the court to make an argument.

Judge Scarritt: I am not making an argument, simply stating the objection.

The Court: State it.

Judge Scarritt: That this question is incompetent, irrelevant and immaterial and has no bearing upon the issues in this case with reference to this bleached flour.

The Court: The objection is overruled.

To which ruling of the court claimant then and there duly excepted.

A. I might want to know, in answering that question, whether Mr. Butler considers the danger line of nitrite—

By Mr. Butler:

Q. Well, we let you fix it, you say that it is safe in one quantity and dangerous in another, do you?

A. I say that this may cause poison in certain quantities, yes.

Q. And it is dangerous when it causes poisons, isn't it, to health? A. Yes.

Q. Now then I want you to assume, I don't know how much you think would be dangerous, but I want you to assume just as much as you can in each one of the four items up to the danger point, but just below it?

Same objection.

Q. The largest safe amount in each one, now assume that the largest safe amount of nitrite poison is in each one of four items of the breakfast.

Same objection.

2341 Q. And if we are trying to condemn either one the amount was just small enough so you could swear it was not poison at all, then I want to ask you if you would recommend the breakfast?

Same objection.

Q. Or consent to it or advise against it from the standpoint of health, if it had four times as much as the largest amount?

Same objection.

The Court: You may answer.

To which ruling of the court claimant then and there duly excepted.

A. I think if the breakfast had four times as much as the safe amount, the breakfast would be dangerous, because it is over the safe amount, be dangerous and possibly four times the part, which would be four times as strong.

Q. Would you condemn the breakfast?

A. Surely I would if it had any such amount as that in it.

Q. Now the fact that they were all the same kind of poison would not make any difference, would it?

Same objection.

The Court: He may answer.

A. Why, yes, it would make considerable difference.

Q. All right, so you would be willing—now let us say formaldehyd is poison in sufficient quantity? A. Yes.

Q. Now we will take formaldehyd in our milk, nitrites in our bread and pancakes, borax—is a poison too?

A. Anything may be poisonous if enough of it is taken.

Q. I know, but is it a poison, is lead chromate a poison in sufficient quantities? A. Yes.

Q. We'll take lead chromate in our coffee, now we'll take sulphites, now in each case there is not enough so that you would have to swear as a scientist that there was not poison, but just a safe amount, but we have formaldehyd and nitrates and lead chromate and sulphite, nitrites and sulphites. Now then I want to ask you whether or not a breakfast of that sort would in your opinion be wholly free from poisonous substances?

2342 Same objection.

The Court: He may answer.

A. Certainly, I guess you have assumed that each one of these substances is present up to a poisonous test?

Q. No, I said just below?

A. Well, just below the toxin test or below the test.

Q. No, I don't say the toxin test. I said just as much as there could be that would justify you as a conscientious scientist in swearing that it was not up to the poison at all?

A. Under such circumstances I should have to know the reaction the substances gave.

Q. And until you could know the reaction you would have to condemn the breakfast out of regard for the public health, wouldn't you?

A. I should not condemn it, I should wait and see what the effect would be what the results would be by experiment on animals.

Q. Yes, feed it to rats to find out?

A. Or other animals, could use rats you see.

Q. And if the rats got fat on the breakfast, then you would recommend it to my babies, would you?

A. Might if I had the chance.

Q. Well, you won't have the chance if I see you first, Dr. Webster.

At this point the further hearing of this cause was adjourned until 1.30 o'clock p. m.

Pursuant to adjournment, Court met at 2 o'clock p. m., Thursday, June 30, 1910, and proceeded further with the trial of said cause as follows:

Ralph W. Webster, resuming the stand, was cross-ex-
2343 amined further by Mr. Butler, and testified as follows:

Q. I will ask you, Doctor, to give us your definition of a poison? A. Of a poison?

Q. Yes.

A. I may not be able to give it exactly as I gave it before, but I will try to give it, as nearly as possible. Poison is an organized substance, inorganic or organic, which may be introduced into the body, or formed within the body, and produces through chemical action or owing to its chemical action certain changes which may be detrimental, or may be sufficient to produce death.

Q. You think your definition is complete and satisfactory definition?

A. Well, it seems to be complete. The only thing that would perhaps be added, that could help it, any, would be that it must be assumed that the quantities—that certain quantities may not produce these effects; certain quantities may produce the effects; all owing to chemical action; within certain limits.

Q. Within the terms of your definition, isn't every substance known to mankind a poison?

A. Within certain limits, perhaps.

Q. Then, strictly within the terms of your definition, as you gave it to Mr. Elliott this morning—and my first question this afternoon was a verbatim repetition of his question which called out your answer, and your answer was practically a verbatim repetition of the answer you gave him; I have transcribed that question and answer. Now, I want to ask you, Doctor, whether or not the definition which you recited here this morning to the jury does not include every substance on the face of the earth, and if it does not, name one that is not included.

A. Well, my idea is there is no substance that is inherently a poison.

Mr. Butler: I move to strike that out.

The Court: That is stricken out.

Mr. Scarritt: Exception.

By Mr. Butler:

Q. I want you to answer my question, Doctor.

A. I would answer that, naming strychnine and arsenic—

Q. No, I object to that.

2344 A. You asked me—

Q. That is not the idea.

A. Strychnine, under certain conditions, is not a poison; arsenic under certain conditions, is not a poison; corrosive

sublimate, under certain conditions, is not a poison; hydrocyanic acid, under certain conditions, is not a poison; sodium nitrite, under certain conditions, is not a poison.

The Court: What you mean is as to quantity and concentration?

The Witness: Yes, sir.

The Court: Only?

The Witness: Under certain conditions.

The Court: No,—You say "under certain conditions". You mean quantity and concentration?

The Witness: Partly. Not only.

The Court: You mean some antidote?

The Witness: No, I mean no antidote. I mean under certain conditions of the body. Certain conditions of age, and certain conditions of well-being.

The Court: Well, I don't know what you are talking about. Let's get at this.

By Mr. Butler:

Q. Can you name any substance which is different from strychnine in that regard? [A.] You say strychnine is not a poison under certain circumstances. You can say that of every substance known to mankind, can't you?

A. Perhaps some substances ordinarily classed as non-poisonous substances will be poisonous, if sufficient were taken.

Mr. Butler: I move to strike that out.

The Court: That may be stricken out.

Mr. Scarritt: We save an exception.

By Mr. Butler:

Q. If you can say that strychnine, under certain conditions is a poison, you can say that of every substance known to mankind, can't you?

A. Taken under proper conditions, and in sufficient
2345 quantity perhaps that is true.

Q. And you may say that every substance known to mankind is a poisonous substance, under your definition under certain conditions?

A. Not under the definition, but under certain conditions, modifying it.

Q. So, then, as we have got it, all substances are poisons, and all substances are not poisons, depending upon conditions and circumstances. Is that right?

A. Why, perhaps you might so consider it. It is a question of many factors.

Q. And it is in the light of this definition that you are testifying that the nitrites are not harmful?

A. Nitrites are not harmful, in my opinion, under certain prescribed conditions.

Q. Because the quantity is so small?

A. Not necessarily because the quantity is so small. There are other factors.

Q. Nitrite will kill people, will it not, if in large enough quantities? A. If you took enough, yes.

Q. Now, can you think of any addition of any substance to a food which you would say was the addition of poison to food, in and of itself, independent of quantities and concentration, and if so, name one?

A. I didn't understand your question.

[A]. Can you think of any substance which, if added to food, would be the addition of a poison to food,—that is, the substance in and of itself, unassociated with the idea of quantity or concentration?

A. Substances added to food along the line of your questioning this morning—

Q. (Interrupting) I am not speaking of that.

Mr. Butler: I move to strike that out.

The Court: That is stricken out.

By Mr. Butler:

Q. I ask you if you can name any substance, which, if added to food, would be a poison, in and of itself, independent of the matter of quantity or concentration, and if so, name it.

A. I could name a great many. Corrosive sublimate
2346 might be added to food in quantity to produce—would be a poison.

Q. Did you hear my question, Doctor?

A. Independent of quantity?

Q. Yes, independent of quantity or concentration. That is what I am asking you. What substance is there, independent of quantity and concentration, which may be said to be a poison, if added to food?

A. I don't know of any substance that, independent of certain limit—certain quantities which may be greater or less, might not.

Q. Are you aware that, by the common speech of people, certain substances are said to be poisonous in character?

A. Yes. There is a distinction between the common idea of poisons, and scientific idea of poisons.

Q. And your definition? A. Yes.

Q. So, your definition does not correspond with the common use of the word, among people generally, as you understand the situation?

A. My idea of the poison is not the common idea, no, of poison, among the laity.

Q. And, if you were writing a book on toxicology, for example, it would not be out of harmony with the ordinary use of the language, as it is used by scientists, to speak of strychnine as a "poison"?

A. No. We speak of strychnine as a poison.

Q. So, in the medical books, and in the speech of the people, certain substances are spoken of loosely, and not in harmony with your definition, to be sure, but are spoken of as poisons, and poisonous substances? A. Yes, sir.

Q. Among those things is aconite, perhaps, and prussic acid, and nitrites, and strychnine, corrosive sublimate, and many, many others, too numerous to stop to recite. Am I not right?

A. Well, nitrites, ordinarily, I should say, were not considered poisons.

Mr. Butler: I move to strike that out.

The Court: That is stricken out.

The Witness: That was part of the question.

2347 By Mr. Butler:

Q. No, I am not asking what is considered poison.

Mr. Scarritt: You put it in his mouth.

Mr. Butler: Well, we will withdraw the question, if the gentlemen desire to relieve the expert from his dilemma.

Mr. Elliott: I object to that statement.

Mr. Butler: Well, I want you to object to that statement, but that is the situation, just the same.

By Mr. Butler:

Q. Now, we will pass to another matter. I suppose learning in your line is derived, not altogether from your own personal experiments, but you take into account the scientific researches of other men? A. Oh, yes; to a large extent.

Q. You are acquainted with Doctor John A. Wesener, of Chicago? A. Yes, I have heard of him.

Q. A standard author, is he not, on the matter of hemoglobin and met-hemoglobin in the blood? One of the best known

scientists in the whole world on that subject, isn't he? Comes right from your own town? A. I should say not.

Q. He is recognized as a reputable author?

A. He is not the greatest author in the world; no.

Q. Who is, besides yourself?

A. I don't pretend to be.

Q. Well, I know, but who is greater than Wesener, on the matter of finding met-hemoglobin in the blood with a spectroscope?

Mr. Scarritt: We object to the argument about experts.

Mr. Butler: I am going to tell the gentleman some of Mr. Wesener's findings.

The Court: He may answer.

By Mr. Butler:

Q. Isn't he recognized as a standard, and one of the prominent men in the field of toxicology, especially as relates to nitrites in flour, and resulting met-hemoglobin in the blood?

A. He has given that matter some attention, I believe.

Q. And you have great respect and confidence in his views, have you not.

2348 A. I respect his views; certainly.

Q. And you would be disposed to rely upon any utterance of his, would you not?

A. I would give it consideration; yes.

Q. Now, if, at the hearing of the bleached flour case in the city of Washington, November, 1908, he stated in substance:

Mr. Elliott: (Interrupting) Now, just in regard to that. We object to this, Your Honor, because Doctor Wesener is not here, and there is no possible way of knowing whether that is what Doctor Wesener said, or not.

Mr. Butler: I am going to ask him about his testimony. That is what he said, and you have the transcript, and you will find that at page 277 of the transcript furnished you of that hearing, when you, yourself, were there, taking part in the hearing.

Mr. Scarritt: It don't make any difference who was there. This kind of testimony is not admissible. It is purely hearsay, not an impeaching question, because he didn't ask Doctor Wesener, when he was here, if he said that, and we object to it for those reasons.

The Court: Objection overruled.

Mr. Scarritt: We save an exception.

By Mr. Butler:

Q. Assuming that he stated as follows: "I have spent a great many years in examining blood with a spectroscope, and I make up a dilute met-hemoglobin solution, and by the time you get it behind the lens for examination, you will find a great deal of oxyhemoglobin. The same change takes place. The oxygen working on the nitrite to change it into nitrate. In other words, you might have in with this oxyhemoglobin 10 per cent of met-hemoglobin, and it would be difficult to find it in the spectroscope." Now then, assuming he so stated, do you say that, if there be produced in the blood by a dose of nitrites one corpuscle, and only one, in which the red coloring matter is changed to met-hemoglobin, will you say that you could demonstrate the presence of that single corpuscle, by the spectroscope which you use?

2349 Mr. Scarritt: We object to that for the same reasons above stated.

The Court: He may answer.

Mr. Scarritt: We save an exception.

The Witness: I don't know that I made any such statement.

Mr. Butler: I move to strike that out.

The Court: Stricken out.

Mr. Scarritt: We save an exception to the ruling.

By Mr. Butler:

Q. I want you to answer.

A. As the blood stands, in examining blood I don't think you could detect one corpuscle in the presence of the—met-hemoglobin that might be present in one corpuscle, in the presence of a large amount of oxyhemoglobin. I have no such idea.

Q. You said to us this morning that this spectroscope would disclose a single corpuscle.

A. I said this morning,—if I may answer what I said?

Q. Well, did you not so say?

A. I am answering what I said.

Q. Did you not state as I said? Did you not say this morning that this spectroscope would disclose a single corpuscle, where the hemoglobin was changed to met-hemoglobin? Did you not so say?

A. May I explain my answer?

The Court: No. He asked you whether you said that this morning.

The Witness: I did not say it that way.

By Mr. Butler:

Q. Did you not, in substance, so say, and did you not intend this court and this jury to understand that, that this spectroscope was so delicate that you could discover a single corpuscle out of the whole mass of blood, changed, if that one corpuscle, and none other, be changed? Did you not intend us to understand that thing by your answer?

A. I did not, and I do not so say.

Q. What was it you intended to say?

A. I stated this morning that the micro-spectroscope was delicate enough to detect the methemoglobin from one
2350 corpuscle. I said nothing about how much I had detected, or anything about the presence of other blood. I said it would detect the presence of the met-hemoglobin in one corpuscle, and I reiterate it.

Mr. Elliott That is the micro-spectroscope?

The Witness: Yes, the micro-spectroscope.

By Mr. Butler:

Q. Now, if enough nitrite, such as it put into this flour by the bleaching, be taken to produce complete met-hemoglobin in one red corpuscle in the human circulation, will that person be living at the time that the chemical change has been completed?

A. If there is enough met-hemoglobin to— May I ask if I understand your question right, before I answer?

Q. Yes.

A. If there is enough met-hemoglobin to—if there is sufcient nitrite to produce met-hemoglobin from one corpuscle?

Q. No, not quite. If he takes enough, so that there may be found complete met-hemoglobin in one corpuscle, will it not follow that all of the rest of the blood has been destroyed, and the man is dead?

A. There is no such a thing, as I am aware, as complete met-hemoglobinomia. That is out of the question. You can't have complete met-hemoglobinomia.

Q. You don't pretend to tell this jury, do you, that the taking of nitrites such as is in this flour—Now, I want to get a little illustration, here. (Referring to black-board). We will call these little globules red corpuscles in the blood stream, normal. A. Yes.

Q. Now, what I am getting at, if you take nitrites, so as to produce met-hemoglobin, will it strike them down one at a time, or will it invade the blood, flowing through it, just as ink does it when introduced in a transparant fluid?

A. Well, I have no absolute knowledge of that, and I know of none in the literature as to that point.

The Court: You don't know whether it strikes them all alike, or one at a time?

2351 The Witness: I don't think you can tell.

By Mr. Butler:

Q. Now, let me ask you another question. You said,—and I think I am quoting you right,—that after you took two grains of nitrites, you demonstrated that there was no—

A. (Interrupting) "Demonstrated"? I may have used that word.

Q. (Continuing) That there was no met-hemoglobin? I think you did. I marked it down.

A. I think possibly I did.

Q. Do you want to modify that?

A. So far as my test would go.

Q. Now, there are a great many hundreds of millions or billions of these red blood corpuscles that have the hemoglobin?

A. Yes.

Q. Now, if you take a dose of nitrite, and it strikes them down one at a time, just like shooting a man, and makes the met-hemoglobin, you might tap the blood over here, and get a lot of these, without finding these, isn't that true?

A. Well, take in one moment—It is a question of how the blood circulates. Makes the complete cycle through the body in a very short period of time.

Q. I know.

A. And the question is how soon you mean. We can't work, I don't believe, quickly enough so as to show the presence in one part, and not possible formation elsewhere.

Q. But, suppose there were many hundreds of millions, and only changed 100, you would be very fortunate if you got any of them by tapping and taking out some of the blood, wouldn't you?

A. Yes. There is that factor; Yes.

Q. So, you don't know whether that is the way it does it, or not?

A. I don't know whether it does that way or not.

Q. Now, let us assume it acts the other way. Here is our red corpuscles, again, in the blood stream. Now, we will assume that, when we eat some of this bread with nitrites in it, it doesn't shoot them down one at a time, but that it impairs it by just touching along, diffusing rapidly like the Griess test placed in the clear solution, painting them, depending upon the degree, very slight at first, then more, and a little more, until 40 or 50 per-cent of the function is destroyed. Then death would come, wouldn't it?

2352 A. No.

Q. 50 or 60?

A. I doubt that death would come with 60 per cent.
Q. 70? A. Possible.
Q. All right. Now, we will say we only have one per-cent. Of course, my drawing here is bad, but it is graphic, and only one per cent is stricken—one per-cent of the function of the power to carry oxygen is stricken. Would that be disclosed in your spectroscope?
A. Well, yes; if there is any met-hemoglobin, at all, it should be disclosed by the spectroscope.

Mr. Butler: I move to strike out what should be disclosed. I asked what would be.

The Witness: Well, I can't say, absolutely, as to that.

Q. Now, do you not agree with Wesener, that at least 10 per cent, and is it not the better authority, that at least 20 per cent of the function of carrying oxygen must be destroyed by met-hemoglobin before any spectroscope will observe the reaction at all?
A. I know of no such work.
Q. But you are not sure, and you will not say that that is not the truth, will you?
A. Under the assumption that you have started the question with, I will.
Q. What assumption is that?
A. There are nitrites of bleached flour.
Q. Well, we will call any nitrites.
A. Now, under the assumption of nitrites taken in small doses, through the stomach—
Q. No, I am not talking about that. I don't care whether it is a carload, or what. We are dealing with another problem besides quantity and I am not going to let you evade it by saying that bleached flour is harmless, and quit talking about it, in that way. You are going to give me an answer to that question. Now, assume that enough nitrite has been taken to strike down one-per cent of the oxygen carrying power of each hemoglobin, and each corpuscle in the system, will you say, as a scientific man, that you test, or any tests, known to scientists, will disclose that change, or will you say you know or you do not know. I do not care which.
A. I say that one per-cent, I am not qualified to answer from any personal knowledge I have.
2353 Q. All right. Two per cent?
A. Well, I would say, again, I have made no experiments to see hom much. I simply know the fact, on the general literature regarding it.
Q. Three per cent? A. I don't know about 3%.
Q. 10%? A. I don't know.
Q. 15%? A. I don't know.

Q. 20%? A. I don't know about 20%.

Q. 25%?

A. I should say that you probably would find traces of met-hemoglobin by certain tests. Perhaps even less.

Q. If 25 per cent of the oxygen carrying power of our whole blood stream had been destroyed by taking nitrites?

A. I should say it was possible. I don't know.

Q. Possibly, that 25 per cent will be disclosed?

A. That you might even disclose less than that.

Q. Now, do you know that monoxide, hemoglobin discloses itself—met-hemoglobin discloses itself much more rapidly, than the nitrite?

A. I don't know what the limit of delicacy is.

Q. And don't you know that the limit of delicacy has been established with the monoxide met-hemoglobin to be above 20% of the whole oxygen carrying power of the blood stream?

A. I know of no such work.

Q. Do you know to the contrary? A. I do not.

Q. Are you willing to say that, when you take 2 grains of nitrites and then bleed yourself, and look at your blood, that you have demonstrated them?

A. I am willing to say that, if there had been any met-hemoglobin that would arise, that I might possibly find it.

Q. Did you ever take blood from the living blood stream of a human being, and find met-hemoglobin produced by nitrites in it.

A. I found met-hemoglobin from the living blood stream. I don't know—I can't say that in this case it was produced by nitrites. It is entirely possible it might have been.

Q. What percentage of the whole oxygen carrying power must be destroyed before sickness will come?

A. Why, I think there are pretty definite experiments on it. I don't think you can get any symptoms from the action of met-hemoglobin before you have 40 per cent destroyed?

2354 Q. What symptoms show it?

A. When you get met-hemoglobin, the beginning symptoms would be, perhaps, slight cyanosis, changing color of the blood, throbbing in the head, lower blood pressure.

Q. Doesn't it show in the breathing the first thing?

A. How?

Q. Doesn't it affect respiration, throbbing of the heart, reeling, staggering, and finally death? Isn't that the picture of nitrite poisoning?

A. Perhaps it goes that way, but the effects you are asking about—the symptoms, are not necessarily, in all cases, produced by toxic action, but sometimes by therapeutic action.

Q. Did you ever see a case of nitrite poisoning?

A. I can't say that I have. I don't recall whether I have or not.

Q. What is the difference between therapeutic action and toxic action?

A. Therapeutic action is the action which we endeavor to obtain by the normal administration of drugs to help people. Toxic action is the action obtained when we give larger doses than are given for therapeutic purposes. Toxic doses are given, or taken, for purposes of producing death. Therapeutic doses are given in order to control symptoms of disease.

Q. Then, I get the idea that it makes a difference whether you are intending suicide, or intending to cure, or kill, when you are taking quinine? A. Why, yes.

Q. And if you were intending to cure, that would be therapeutic, and if you were intending to commit suicide, it is toxic?

A. Yes; certainly.

Q. So, it depends upon the intention of the person taking or giving it?

A. I don't know whether it depends upon the intensity of the person giving it.

Q. No, the intention. No, not on the intensity,—the intention, the will, of the person.

A. It might have something to do with that; yes.

Q. So, then, if I propose to cure you of some malady that you have, and I gave you some prussic acid, that would be therapeutic, but if I intended to kill you, and gave you just the same amount, that would be toxic, would it?

2355 A. Not if you gave me enough for a therapeutic dose, you wouldn't give me enough to kill me, and therefore it wouldn't be a case of therapeutic and toxic doses.

Q. It wouldn't be toxic, unless I gave you enough to kill you? A. No; certainly not.

Q. So, then, as I draw the generalization from the detail mentioned, no substance produces toxic action, unless in fatal doses?

A. Oh, yes; yes. Lots of drugs produce toxic action in less than fatal doses. It is not what would necesarily be fatal, by any means. It is not necessary, if I take a dose of strychnine, that I die.

Q. Well, now, let me see. Is the question of therapeutic action or toxic action one of degree, only?

A. Oh, the toxicity of a drug—

Q. (Interrupting) I am not speaking of the toxicity of a drug. I am speaking of the toxicity of the action resulting from taking a poisonous substance.

A. That is the toxicity of a drug. The toxicity of a drug depends upon many factors. It depends upon the dose.

Q. I know, but is a toxic dose always greater than a therapeutic dose?

A. It depends upon conditions. It may be exactly the same dose. Depends upon the individual; depends upon the age of the individual; depends upon his size; depends upon his condition; depends upon a lot of factors.

Q. If it be given as a medicine, it is therapeutic?

A. If it be given as a medicine, the one giving it as a medicine would certainly give it in proper doses.

Q. No, but suppose he made a mistake and killed him; would it still be therapeutic? A. No. Toxic.

Q. Is the change of hemoglobin to met-hemoglobin due to chemical action?

A. It is due not to chemical action, in the ordinary sense.

Q. Is it due to chemical action, at all?

A. Due to something which comes under the head of chemical action; yes.

Q. Now, you say that urea in the saliva is one of nature's own defenses against nitrites added to bread by bleaching flour?

A. I said urea in the saliva and elsewhere; yes.

2356 Q. Well, we will speak first of the saliva.

A. It is possible.

Q. So, then, we understand that urea in the saliva is nature's own defense to the poisonous nitrites which may be found in bread made from flour bleached by nitrogen peroxide gas, is it?

Q. I don't say that, urea in the saliva, alone; no.

Q. Well, is it one of the defenses?

A. It is a portion of the amount of urea that I have in mind; yes.

Q. Is urea a normal constituent of the saliva, of well human beings? A. It is.

Q. Found in health and sickness alike?

A. Found in larger quantities in certain diseased conditions. Found in less quantities in normal conditions.

Q. What is the normal amount of urea in your saliva?

A. I have not tested it.

Q. How many persons have you tested?

A. I have never tested it. Never had occasion to.

Q. Did you ever find urea in any person's saliva?

A. I have never had occasion to test for that.

Q. You know, do you not, that it is common with people whose kidneys do not functionate normally?

Q. That, and a thousand other things.

Q. You know it is common with them?

A. It may be found there; yes.

Q. And it is, frequently, isn't it?

A. Well, if the kidneys are not functionating properly.

Q. And you know that doctors treat people so as to make them sweat stimulate the flow of saliva, and all that sort of thing, when the kidneys will not act, by reason of nephritis, Bright's disease, and the like?

A. Yes, it is usual to make them sweat. The drug that is given to persons to produce sweating—

Q. (Interrupting) I am not asking you that. You are familiar with the fact that they try to get it to pass out through the skin? A. Yes.

Q. That is, vicarious excretion? A. Yes.

2357 Q. Many instances of that?

A. There are instances, in disease.

Q. In other kinds of functions?

A. The vicarious functions of all the organs,—any organs may be diseased, and other organs take up that function vicariously. That is possibly true. A large number of the organs, any way.

Q. Of the nitrite, now, in the saliva. How much nitrite is there in your saliva?

A. I have found it as high as 4.5 parts nitrite per million.

Q. Is there any urea in your saliva to off-set that nitrite?

A. I never tested, and if there were, it wouldn't decompose it.

Q. I? what?

A. If there were urea, it would not make any difference. It would not destroy the nitrite reaction in the saliva.

Q. It would, if you took it out and put it in a test tube, and used a little hydrochloric acid?

A. Yes, but I had no occasion to take it out and examine it.

Q. Do you say that there is enough urea in saliva to take care of the nitrites in the saliva? Is that the rule? Is that one of the Lord's own ways of getting rid of this source of poisons? Urea is a poison, too, isn't it?

A. It might possibly come under that head, yes. I wouldn't argue with you on that.

Q. And your idea is that nature's own defense against these nitrites, which are poison, is another poison?

A. Oh, no. Urea is a product of the normal activity of the system. It is a normal constituent, in various parts of the body. It is a normal substance. So are the nitrites.

Mr. Scarritt: So are what?

The Witness: So are the nitrites.

By Mr. Butler:

Q. Now, reference has been made to some of your authorities. I want you to cite me to any authority or authorities

which you know which say that urea in the saliva is a defense to nitrites, taken either as a medicine, or in food, as a poison?

A. I don't know of any authority that so states.

Q. Have you examined for authorities on that subject?

2358 A. I never have looked that phase of the point up. Never had occasion to.

Q. In all your reading and learning, you never heard or saw it written in any book or authority, that the urea found in the saliva were a defense against nitrites in food, or nitrites as medicine, or nitrites as poison, have you?

A. Never seen it. I am learning new things every day. That is not unusual.

Q. Now, when did you first learn that the urea of the saliva was nature's defense against the nitrites, such as may be added to bread by bleaching the flour by Alsop's process.

A. When did I first learn it?

Q. Yes.

A. I haven't learned it. I have experimented upon it—talked about it.

Q. Do you say that is the truth?

A. Oh, I simply have that as an idea. I am entitled to my assumption only.

Q. Then, you give it, not as a mature conclusion, but as an idea, or an assumption?

A. I give it as an idea, based upon reasoning, and based upon a large number of facts which can be presented to show that this might be one of the ways in which nitrites—There is nothing been written upon it. I have a right to assume that it may be possible.

Q. Did Doctor Haines tell you that it was possible?

A. No, he did not tell me so.

Q. Did he tell you he believed it to be so?

A. We talked the matter over.

Q. And he told you that he believed the urea in the saliva was nature's defense against nitrites that might be taken either in foods, or medicines, or as a poison?

A. No. He didn't tell me.

Q. Who originated the idea, now? Did you ever, in any of these bleached flour litigations, or anywhere else in the world, hear any medical man stand up and proclaim that urea of the saliva was one of nature's defenses against nitrites in food, nitrites as medicine, or nitrites as poison, until you heard Doctor Rockwood, from that stand?

A. Yes. I had heard it mentioned before I heard Rockwood mention it?

2359 Q. Who mentioned it?

A. I heard Doctor Haines mention it.

Q. Where? A. Chicago.

Q. When?
A. Oh, some ten days ago, I guess. I can't recall when.
Q. You are connected with him in a professional way, in some institution, somewhere?
A. We are in Rush medical college; yes.
Q. So, then, that is really a new suggestion, is it not?
A. It is a suggestion, like a lot of other suggestions must be introduced. We are trying—

The Court: (Interrupting) Oh, he asked if it was a new suggestion.

The Witness: I was trying to answer.

By Mr. Butler:
Q. Is it a new suggestion?
A. Relatively, so far as I know.
Q. Now, you told us that experimentation, in glass, and test tubes, etc., are not to be compared with the changes in the vital organism?
A. No. They are different in degree, yes; I would state that. Different in time.
Q. And if you prove one thing in a test tube, like making met-hemoglobin of an ox's blood, that don't prove it will make it in the body, does it? A. No.
Q. And if you get some urea at a drug-store, and fix up some trinkets like this exhibit 278—

Mr. Elliott: (Interrupting) Fix up some what?

Mr. Butler: Trinkets: I will call them trinkets. 278 and 279.

Q. You think that that, to scientific men, has any tendency to prove that a little urea bought at a drug store, sprinkled on bleached flour, would neutralize the nitrites added by the bleaching, so that we could eat the flour without any danger of the evil effects from the nitrites?
A. Perhaps not, in itself, but we have other evidence.
Q. I know, but, of itself, you would not, as a scientific
2360 man, say that it did?
A. I would take it into consideration; sure.
Q. Don't you think that the urea you could go and buy in the drug store, and get it in a spray, and spray it into the flour after it had been bleached by the nitrite reacting material that is put into it by the bleaching,—don't you think that that would, then and there, eliminate all danger of nitrites?
A. I believe that if you put urea in the bread, that has the nitrites, that you will not be able to demonstrate the Griess reaction.

Q. So, then, the nitrites would be destroyed.
A. I think it can be proven.
Q. So, you hold, do you not, that if these Alsop machines had a urea spray, and sprayed the flour with urea at the time they were treating it with NO2, that the nitrites would not be in the flour, when it was bleached, and that it would, therefore, be safe, don't you? A. Why, not—
Q. (Interrupting) Now, you will have to answer that question. A. Yes.

Mr. Elliott: I object to that as incompetent, irrelevant and immaterial.

The Court: The answer may stand.

By Mr. Butler:
Q. So, you hold, do you not, that it would eliminate all question of danger, if they would just take an atomizer, and spray the flour with urea, immediately after it had gone through the agitator when it was bleached with NO2 gas, don't you?
A. I hold there is no danger in the bleached flour, as such.

Mr. Butler: I move to strike that out.

The Court: That is stricken out. That is not an answer.

Mr. Scarritt: We save an exception to the ruling.

The Court: What he asked you is, if this thing is dangerous, whether it would do any good to spray it with urea.

The Witness: That would depend entirely upon how much urea was put in there.

2361 By Mr. Butler:
Q. The right amount?
A. I am not passing judgment on that. I would want to experiment and see what effects would happen, under what conditions you would get certain products formed by the action of the urea, and so on. I wouldn't want to state, off-hand.
Q. So, you wouldn't be ready, yet, to patent the urea sprayer as an addition to the Alsop process, would you?
A. Not unless I could be sure of getting it.
Q. Not unless you could sell it? A. Yes.

Redirect Examination

By Mr. Elliott:
Q. Doctor, is it not known that nitrites are destroyed in the system when given in relatively large amounts?
A. Yes. It is well known.
Q. Now, Mr. Butler asked you questions about urea in the saliva. I want to ask you if urea is in other parts of the body, including the stomach?

A. Oh, yes. Urea is found—urea is a product of the decomposition of protein—of the proteolytic decomposition in any part of the body. Might be proteolysis, or the decomposition going on in practically every cell in the body.

Mr. Butler: I move to strike out the answer, as not responsive to the question. I move to strike it out, except as relates to the stomach.

The Court: That may be stricken out, all except the stomach.

By Mr. Elliott:

Q. Is urea in the stomach? A. Yes, it is.

Q. Is it in other parts of the body?

A. It is in other parts of the body.

Q. I will ask you, do we have amino acids in the ordinary foods that we eat?

A. We have amino acids in relatively large quantities, in quite a large number of the common foods; yes.

2362 Q. And is it well-known that amino acids, and nitrous acids—amino and nitrous acids will react with each other? A. Certainly.

Q. Amino compounds? A. Yes, sir.

Q. And cause mutual destruction?

A. Cause mutual destruction, and formation of hydroxy compounds from the amino compounds; yes.

Q. Is urea also present in the saliva, and the gastric juice? A. Yes, sir.

Q. What bearing would this fact have on the destruction of nitrites in the food? A. Of the nitrites in food?

Q. Yes, sir.

A. This would tend to destroy the nitrites in food, when the reacting material reached the stomach, where the nitrous acid was liberated from the nitrites. It is the nitrous acid that reacts with the urea, one molecule reacting with one molecule.

Q. I will also ask you if there are denitrifying or nitrite-destroying bacteria in the alimentary tract, and, if so, what bearing has that fact upon the destruction of nitrites in the food?

Objected to as not proper redirect.

Question withdrawn.

Q. Now, Doctor, upon this question of met-hemoglobin. I will ask you if met-hemoglobin is converted in the body, into hemoglobin, again? A. Yes, relatively rapidly.

Q. Is the production of met-hemoglobin, therefore, fatal to that part of the blood converted?

A. By no means, unless there has been sufficient destruction of the red cells to so destroy them that they are not capable of regeneration, or of rebuilding up of the hemoglobin—oxy-hemoglobin.

Q. I will ask you if, in your judgment, there is any proof that nitrites, in small amounts, produces met-hemoglobin in the body,—that is, in the living, circulating blood?

A. I think there is absolutely no proof that nitrites, in small quantities, do produce met-hemoglobin in the blood current of the body.

Q. Do you understand lead chromate, and borax, and coal tar dye, and those other substances put to you by Mr. Butler, are normal constituents of food, or normal constituents of the body?

2363 A. No, sir.

Q. Now, in expressing an opinion as to the harmfulness or harmlessness of minute amounts of a substance, would you, as a toxicologist, be influenced by the consideration that the same substance is constantly and inevitably being taken into the system?

Mr. Butler: Objected to as not redirect, argumentative, leading and suggestive.

The Court: He may answer.

The Witness: It would be very largely influenced by that fact, that substances are—

By Mr. Butler: That is all.

By Mr. Elliott:

Q. I will ask you to explain your opinion?

A. Substances that are being taken into the body constantly, are substances to which the body becomes accustomed, and, as a rule, if [there] substances are added in small amounts to the food, they would produce no deleterious effects on account of the relative tolerance, or the effect, or the action of some check or other in the system upon the substances so introduced. Substances which are foreign to the body, such as lead chromate, borax, formaldehyd, would be substances which would be deleterious, and which, perhaps, in small amounts, would better be left out of the flour—out of the food. There are reasons for adding certain of these substances, however, such as formaldehyd. I have many reasons for believing formaldehyd, as an adulterant, should be used.

Mr. Butler: Should be used in food?

The Witness: Should be used in milk.

Mr. Butler: You think it should be?

The Witness: I have certain reasons for believing it.

Mr. Butler: Tell them all, will you?

The Witness: I say I have certain reasons for so believing.

The Court: Now, let us understand. You think formaldehyd ought to be used in milk, to preserve it?

Mr. Elliott: Now, just explain your opinion.

2364 The Witness: I do, under certain conditions. During this hot spell, such as we are having now, 9-10ths of the milk that comes into Kansas City, for instance, is absolutely bad. It is infected with organisms which are deleterious to the infant, if they be taken into the stomach as food of the child, and the child soon has enteritis, and dies more or less soon. With the formaldehyd,—which I am not advocating as the best treatment,—but, with the presence of formaldehyd in the milk, we have these bacteria, to a large extent, destroyed, and, therefore, the milk rendered usable, and the large majority of the people who can't get hold of decent, clean milk. The same thing can be said of benzoic acid.

The Court: Now, let me see if I understand you. You think that milk ought to be preserved with this corpse-embalming fluid, called formaldehyd?

The Witness: I don't think it is a corpse-embalming fluid. I don't consider it so. Such a substance is used, however.

The Court: Don't every undertaker use that?

The Witness: Some of them do, but my opinion is this substance, in the amounts added to milk, would not be a corpse-embalming substance, but, on the other hand, if we have no means of adding this substance to milk—I don't say milk, I say something else—

Mr. Butler: (Interrupting) I will object, may it please the Court, to the lecture about something else.

The Witness: I will use formaldhyd.

Mr. Butler: All right.

The Court: He is talking about formaldehyd.

The Witness: I simply used formaldehyd as an example.

Mr. Butler: He will come around to pasturizing, presently.

The Witness: No, I am not going to mention that. The use of formaldehyd is certain to produce a certain amount of

disinfection of the milk. In the absence of proper methods of cleansing and assuring that the milk is clean, as it comes to the average person in the household, and the average
2365 people, that milk must be preserved in some way, formaldehyd being one method. Not only our babies are going to gradually have enteritis, but are going to have, gradually, various other things, and are going to die with it.

The Court: You think that the babies about a great many hotels, in drinking milk, would be healthier than babies in the country, drinking good milk?

The Witness: Not at all. Milk in hotels is notoriously dirty milk. You take the Baltimore hotel, the milk is far from clean. I have found sediment in the milk pitchers and cream pitchers in quite a large amount, which is one of the fairly good hotels in Kansas City, and I suppose it applies to other hotels, so that I don't assume that to be true, at all. That sediment may be bacteria, as far as I know.

The Court: Well, go ahead. I didn't know.

The Witness: I don't know.

The Court: I knew that undertakers used it.

The Witness: Yes.

The Court: And I knew some of these milk-wagon fiends used it, and I didn't know it.

The Witness: If it isn't preserved, the children get—if it isn't clean—I don't say preserved—if it isn't clean, the children must get, during this hot season, enteritis, in which enteritis is the chief cause of the children's death during this hot term, as any hygienic work will advocate.

By Mr. Elliott:

Q. Mr. Butler was questioning you about your recent experiment and knowledge of urea. I want to ask you, Doctor Webster, if you ever heard it suggested, before this case, that it was harmful to breathe the air, or to swallow ones own spittle?

Objected to as not proper redirect.

Overruled.

A. No. I never have had any such knowledge, that it was injurious to breathe the air. I know that some air is bad, but I never heard it was strictly harmful to breathe air. We

have to breathe it, as necessary for life,—got to have
2366 oxygen. Can't get along without it.

Q. Are you familiar with the substance, benzoate of soda? A. I have heard of it; yes.

Q. Is that a preservative? A. Yes.

Q. Used as a preservative?

A. Yes, and so allowed by the United States government.

Q. In large quantities, is it a poison? A. Yes.

Q. And, in small quantities, in your judgment, would it be harmless?

A. Absolutely harmless, yes, small quantities.

Q. Is benzoic acid, from which benzoate of soda is derived, a normal constituent of certain foods?

A. Yes. It is present in large quantities in certain foods, and constantly produced in the system.

Q. And does that fact have an influence in enabling you to express the opinion that it is harmless?

A. Yes. The fact that it is constantly found in very everyday foods; the fact that it is the product of normal activity in the system, influences me, largely, as well as other things. That is one factor.

Q. Is it within your knowledge that nitrites occur normally in certain foods, and are swallowed constantly, by swallowing the saliva?

A. Yes, sir. It is found in certain foods.

Q. In your opinion, would the character of benzoate of soda, or benzoic acid, as occurring naturally in foods, and being normally taken into the system, be comparable with these nitrites?

A. Yes, it would be entirely comparable to the introduction of nitrites into the system.

Recross Examination

By Mr. Butler:

Q. Doctor Webster, you favor the adding of formaldehyde to milk, because the milk is dirty, and foul, and has to be preserved? You wouldn't favor adding it to clean milk—we will say good cow's milk?

A. There would be no reason for adding formaldehyde
2367 to perfectly pure, good milk.

Q. You think that would be an adulteration of the milk, wouldn't you?

A. Within certain limits. My idea—if I may be permitted to state is—is simply this; that if there is any good can be done by adding it, and no harm done, at the same time, then it is advisable to use it.

Q. Just like giving strychnine for medicine, isn't it?

A. Yes, something on that basis.

Q. Simply comparable? A. Yes, it is comparable.

Q. But you would say that it was wicked, and sinful, and wrong to add formaldehyde to clean milk that was being fed to a baby—pure, fresh milk? You would say that was dangerout to the baby's health, and it would be wicked and wrong to do it, wouldn't it?

Mr. Scarritt: We object to that form of the question.

The Court: He may answer.

The Witness: I wouldn't say it was wicked and sinful, if it was introduced in very infinitesimal amounts.

By Mr. Butler:

Q. You would think it was unjustified?

A. I would think it was unnecessary.

Q. And unjustified?

A. Yes. There would be no reason for adding it, because the milk was already clean; therefore, no reason.

Q. Do you believe in adding borax and coal tar dye to pancakes and syrup and butter?

A. Why, it depends upon the butter.

Q. Well, is that the only answer you can give us?

A. No. As a general rule, I don't believe in adding things to food products. That is my position.

Q. But, on the Baltimore hotel butter,—you seem to like to denounce that place—

A. I don't like to denounce it, and I do not denounce it.

Q. —and hotels generally, now, how about the butter you get in the hotels in Kansas City? Do you think adding borax, and coal tar dye, would be a good thing?

A. No. As a general rule I should say there would be no reason for doing that.

2368 Q. I asked you if it would be a good thing, or a bad thing, for health.

A. I don't think it would be particularly bad. I don't say it is good.

Q. Nitrites and nitrates, added to bacon, and eggs—do you think that would be a good thing, or a bad thing for health?

A. I think ham and bacon are largely cured that way, and makes the bacon considerably better.

Mr. Butler: I move to strike that out as not responsive.

The Court: It is not responsive.

Mr. Scarritt: We except.

A. Added, in the sense of additional to the curing, you mean?

By Mr. Butler:

Q. I mean adding it to the natural ham, and the natural bacon, and eggs?

Mr. Scarritt: In what manner?

By Mr. Butler:

Q. Go on and answer.

A. I prefer the cured ham to the uncured.

Mr. Butler: I move to strike out the answer, as not responsive.

Mr. Scarritt: We object to its being stricken out.

The Court: It is stricken out.

Mr. Scarritt: We except.

A. I don't think it is harmful, then.

By Mr. Butler: You think it would be a good thing for health.

A. I think it is a good thing.

Q. To add nitrites to bacon and eggs?

A. Added, in the sense in which I mean added, in curing of the meats, I certainly do believe it is a good thing.

Q. Do you think it would be a good thing to add boracic acid to eggs, and preserve them, as liquid eggs, for use in making our cakes, or a bad thing?

2369 Mr. Scarritt: Same objection.

The Court: He may answer.

Mr. Scarritt: We except.

A. As I said before, I don't believe that the addition of things, as a rule, to food products, is advisable. The addition of substances, other than substances that are normally found or introduced into the system, are different. The action is different.

Q. I wasn't calling for a speech, but only for an answer to the question whether you think it would be a good thing for health, to preserve eggs in liquid form, by boric acid, and then make a cake out of the eggs so preserved.

Mr. Scarritt: Same objection.

The Court: He may answer.

By Mr. Butler:

Q. Whether it would be a good thing, or a bad thing.

A. I think it would be a bad thing, because the eggs that are preserved are generally, when they are in liquid form,—are usually bad, before they are preserved.

Q. Now, with respect to coffee. Do you think it is a good thing or a bad thing, to put lead chromate on the coffee?

A. Why, certainly, lead chromate, under any conditions, I shouldn't think it would be advisable to add it. I haven't heard that it was.

Q. You have never heard of the contamination of coffee that was made beautiful and purified by lead chromate?

Mr. Scarritt: We object.

A. I have heard statements of it, but I don't know it.

By Mr. Butler:

Q. You have never seen the coffee?

A. I have never found it in it.

Q. But you do know, do you not, that it customary or has been, until stopped by law, to coat the coffee with chromate of lead?

A. I know it has been used, but I do not approve of it.

2370 Q. How about sulphates in sugar? Do you believe in that?

A. I don't know. As a general thing, I do not believe in the addition of any of these things.

Q. Now, take some sweet pickles with some alum. Now, you know they use some alum, sometimes?

Mr. Scarritt: We object.

A. They use it in baking powder, too.

Q. Now, let us say in the sweet pickles we would have for lunch, there would be some benzoate of soda, and copperas, and alum. Do you think that would be a good thing, or a bad thing?

Mr. Scarritt: Same objection.

A. I think it would be a bad thing to put copperas in any article of food.

Q. And yet you know, do you not, that some of these things are sometimes added to sweet pickles?

Mr. Scarritt: That has nothing to do with this case, if Your Honor please, and we object to it.

The Court: What is the objection?

Mr. Scarritt: It has nothing to do with it. He has already stated.

The Court: I say, what is the objection?

Mr. Scarritt: The objection is it is incompetent, irrelevant and immaterial, has nothing to do with the issues in this case.

The Court: Objection is overruled.

Mr. Scarritt: We except.

By Mr. Butler:

Q. You may answer.

A. I have forgotten what substance you mean.

Q. Sweet pickles, adulterated with alum, benzoate of soda, and copperas.

A. I wouldn't think that would be a very good thing to use, no. I would not approve of it, for copperas and alum. I might of the benzoate of soda.

Q. Canned peaches, with some saccharin added?

2371 Mr. Scarritt: Same objection.

The Court: He may answer.

The Witness: Saccharin, I should say would be absolutely harmless. I use it very frequently, and very widely given to patients in relatively large quantities, given in frequent doses.

The Court: Canned peaches?

The Witness: Saccharin.

By Mr. Butler:

Q. Saccharin you approve of? A. Oh, certainly.

Q. Now, sweet cider, fixed up with a lot of ammonium fluoride,—how would you like that?

Mr. Scarritt: Same objection.

A. I wouldn't care for it.

By Mr. Butler:

Q. You would consider that injurious to health, wouldn't you?

A. These substances I would not consider injurious to health. I can go back and explain my situation, as I did, earlier in the morning. My opinion is this; it was best not to add anything that is inherently harmful.

Q. What is "inherently harmful"?

A. Inherently harmful would be—ammonium fluoride would be inherently harmful in large enough doses.

Q. Is that the only substance?

A. No, we might have anything.

Q. Name some more inherently harmful substances.

A. There are other substances known, can come under that, "inherently harmful."

Q. What do you mean by "inherently harmful"?

A. I mean substances which, in and of themselves, are harmful, in and of themselves, in all doses,—in all quantities.

Q. Name them? A. I can't.

Q. Well, let us go on. You can't answer that. Now, from the breakfast that I stated to you this morning, there are, by your own testimony, 13 doses of poison, or substances inherently harmful, if it was in sufficient quantities?

2372 A. Yes.

Q. Do you think, from the standpoint of good health, you being able to conscientiously swear that the dose of no one of them was big enough to be poisonous, can you conscientiously swear that that kind of breakfast, morning after morning, day after day, and month after month, and year after year, is not injurious to health, or may not be?

Objected to as immaterial.

The Court: He may answer.

A. I should say, just as I said this morning in answer to that same question, that I was unable to answer that, without knowing what the interaction of various of these substances was. I couldn't answer that question catagorically.

By Mr. Butler:

Q. Suppose, for dinner, we had boiled corned beef and cabbage?

Mr. Elliott: We object to that. It has all been gone over.

The Court: It is hardly recross-examination.

By Mr. Butler:

Q. Now, Doctor, I want to ask you, how are nitrites destroyed? I believe you told Mr. Elliott nitrites are destroyed in the body, when taken in large doses, and, if that is so, how do they have any medicinal effect?

A. How do they have any medicinal effect?

Q. Yes.

A. There is the well known fact—I must answer this rather at length, Judge. I can,t answer it only by yes or no. It is well known that when various nitrites, such as nitroglycerine, in 1-100th of a grain—

Q. (Interrupting) Well, now—

A. I have got to say this. These nitrites—

Q. (Interrupting) If you will pardon me, I am not asking you to give anything about that. I want you to start with the nitrite in the body.

A. I have got to give that.

Q. You say they are neutralized or destroyed, and I say, assuming they are put in the body, and that they are
2373 neutralized and destroyed and I want you to tell me, if that is so, how they have any medicinal effect?

A. The first assumption I should have to make, to answer that question is, that substances in the stomach are not within the body. The substances introduced into the stomach is acted upon by the hydrochloric acid and the urea, producing the splitting up of those two substances, a portion of which never gets into the blood.

The Court: Here, Mr. Witness, is the question, as I understand it. The Government contends that these nitrites getting into the blood, into the system, are harmful. You say they don't get there because they are destroyed by the urea. If they are destroyed by the urea, how can they be effectual as a medicine?

The Witness: I was just going to explain.

The Court: Well?

The Witness: A certain portion of them never gets into the blood, and therefore, can exert no effect, because within the stomach a substance is not in the system. That is outside of the body, as long as it is in the stomach. Now, a certain minute portion or a large portion, we know is destroyed by these natural defense, and never gets into the blood. The portion of that that does get into the blood exerts a medicinal influence. Now, when that 1/100th of a grain, of nitro-glycerine—

Mr. Butler: (Interrupting) I am objecting to the nitro-glycerin.

The Witness: I can use amyl nitrite, if you wish.

Mr. Butler: Is nitro-glycerin a nitrite?

The Witness: It is a nitrate, but it splits up into a nitrite, and acts partly as a nitrite, and in the form of nitrate, also.

Q. Is amyl nitrite given by the mouth? A. No.
Q. Now, these are the nitrites given by the mouth.
A. Nitro-glycerin is given by the mouth.
Q. Can't you think of any nitrite?
A. Yes, sodium nitrite. I am going to work up to sodium nitrite, in just a moment, in answer to that question.
2374 Q. Oh, no. Come straight to the point.

A. I have got to use comparison. You asked how it is that they exert a poisonous or medicinal effect. A grain of sodium nitrite is supposed, theoretically, to exert the same effect as 1/100th grain of nitro-glycerine. Now, if the nitro-

glycerin acts as the text book say—if nitro-glycerin acts by its nitrites, why does 1-100th grain nitro-glycerin act just the same as a grain of sodium nitrite? Simply because a portion of the sodium nitrite is decomposed in the system. You got more than enough to be used up by the urea.

Q. So, I understand you would have to put in enough nitrite to overcome the urea in the stomach, before you would get any medicinal action? A. Oh, no.

Q. How does urea get into the stomach, except by the saliva?

A. It is partly formed there. It is partly excreted there. The stomach is one of the greatest [excreted] there. The stomach is one of the greatest excretory—

Q. (interrupting) By what gland?

A. I don't know by what gland. That is not known, but the stomach is one of the greatest excretory organs we have.

The Court: Now, please—

The Witness: (interrupting) He asked me.

The Court: Now, just a moment.

Mr. Scarritt: I want the witness to have a chance.

The Court: I say, regardless of anybody, that these lectures upon matters not called out here are exceedingly tiresome.

Mr. Scarritt: We except to the Court's ruling.

The Court: Now, wait until I get through.

Mr. Scarritt: All right.

The Court: Now, you are asked a question, and you go on here and deliver us a lecture. It is not pleasing to me, or instructive.

Mr. Scarritt: We except to the Court's remarks about this witness.

The Court: You may answer the questions, and not
2375 anything else. Now, just wait until the question is asked, then answer it. Now, ask him a question, and let us get on.

Mr. Butler: We will pass over that subject.

Q. You told Mr. Elliott that met-hemoglobin in the blood changes back to hemoglobin?

A. Why, yes. I certainly did.

Q. Will you cite me to any authority that says that?

A. Yes, I can tell you—cite you to a great many. Hammerstein's text-book, in front of you.

Q. That it changes back? A. Not eliminated.
Q. No, but changes back.
A. Reconverted—is changed in the hemoglobin, and then into oxyhemoglobin, but you can find it in Hammerstein. I can't give you the page, but it is there.
Q. You say it is in Hammerstein? A. It is there.

The Court: Don't stop to look it up. You can look it up at your leisure.

The Witness: I have got to answer the question.

The Court: Now, listen: You do not have to do anything of the kind. I say that you will, after leaving the stand, look this up, and find the page, and [they] you will be recalled and answer as to that. You do not have to delay this Court 'til you look that up.

By Mr. Butler:
Q. Are you familiar with an authority called by the name of Asher, who writes in the Journal of Biology?
A. I know Asher's work. I don't know on what subject. I am familiar with some articles by Asher.
Q. He is a man of repute and standing.
A. He is a man that has written. I know nothing of his standing.
Q. Does he not lay it down in volume 40, at page 541, in the year 1900, that urea is not normally present in the saliva, but may occur when the kidneys are closed, or words to that effect?

Mr. Scarritt: I object to that, because the witness says he doesn't know anything about the author or the book.

Mr. Butler: I don't think he will say he don't know
2376 anything about the book.

The Court: What do you say about the book?

The Witness: I say I don't know what he states. I have quite a number of references on the other side.

By Mr. Butler:
[—] You know Asher?
A. I know Asher, but he is not a great man. Asher is a good man, but there are men just as good.
Q. He is a professor, teaching?
A. Yes, there's lots of professors teaching that are not any good.
Q. Is he one of them? A. I don't know.
Q. Do you teach?
A. I do, and I am not any good.

Mr. Butler: Thatk you. That is all, sir.

Witness excused.

Walter S. Haines being called as a witness on behalf of claimant, being first duly sworn was examined, and testified as follows:

Direct Examination

By Mr. Elliott:

Q. State your full name?

A. Walter S. Haines.

Q. And your residence?

A. I live in Chicago.

Q. Your occupation.

A. I am the professor of chemistry materia medica and toxicology in Rush Medical College there, and I am the professorial lecturer on toxicology in the University of Chicago.

Q. How long have you been in Rush Medical College and in the University of Chicago?

A. I have held my present position there in Rush Medical College, for the past thirty four years. I have had my present position in the University of Chicago for the past nine

2377 years.

Q. What is toxicology, Dr. Haines?

A. Toxicology is the science that treats of poisons.

Q. What learned societies, if any, are you connected with?

A. I am a member of the Chicago Medical Society; of the Illnois State Medical Society; of the American Medical Association. I am a member of the American Chemical Society, and am a fellow of the Chemical Society of London.

Q. What other positions, if any, in connection with your profession, do you hold?

A. I am a member of the committee of revision of the United States Pharmacopoeia. I was appointed to that position in 1900 for ten years, and I was reappointed to the same position for another ten years in May of this year. I am Chairman of the Committee on Pharmacology of the Chicago Medical Society. I am the toxicologist to the Presbyterian Hospital in Chicago and I am a member, appointed by the Governor of the State of Illinois of the Commission on occupational diseases of the State of Illinois.

Q. Have you given particular attention to toxicology, Dr. Haines? A. Yes, I have.

Q. Are you familiar with the occurrence of nitrites in the human saliva? A. Yes, I am.

Q. Within what range have you found them to occur?

A. In my own personal observation I have found them to occur within the range of about one tenth part of nitrogen as nitrate re-acting material to a million, up to about five

parts nitrogen as nitrite reacting material, to a million. Those are my own observations.

Q. Will you tell us how much saliva is swallowed during a day by an average adult?

A. About a quart and a half or two quarts.

Q. About a quart and a half or two quarts?

A. Yes. From one to two quarts, perhaps.

Q. In your judgment could the swallowing of this amount of saliva containing varying amounts of nitrite, day in and day out and year in and year out, be harmful?

A. No. In my opinion it could not possibly be harmful.

2378 Q. And if you have any reasons for that opinion you can express them.

A. My reason for that opinion is this: Saliva is swallowed from earliest infancy until death, and this saliva always, or very nearly always contains nitrites, or nitrite reacting material. This has been going on for ages without any question, and the system has become accustomed to such nitrites. It has become a part, or rather, the nitrite reacting material has become a part of the processes of life, consequently I cannot conceive that substance that is all the time entering the body —that has as far as we know always been entering the body, would possibly have any influence upon it in an unwholesome way.

Q. Suppose you are called upon to express an opinion as to the harmful or harmless character of a substance. Now, I will ask you, in expressing an opinion as to the harmfulness or harmlessness of minute amounts of a substance, would you, as a toxicologist be influenced by the considerations that this same substance is constantly and inevitably being taken into the system?

A. Yes. Those considerations would have a very great influence.

Mr. Butler: I move to strike out the weight of the influence as not responsive.

The Witness: It would have a very great influence upon my judgment. In fact, I think they would have, perhaps the determining influence upon my judgment.

By Mr. Elliott:

Q. Have you any opinion Dr. Haines, as to how nitrites are dealt with when taken into the body by the mouth?

Q. Yes. I have an opinion.

Q. Will you please tell us your views?

A. I believe that, when nitrites are taken into the body by the mouth, that, as they pass into the stomach, and the material becomes acid, there are certain substances present in the

stomach that cause their decomposition, among others urea, which is found in the saliva, and swallowed, and becomes a part of the stomach's contents, and through somewhat similar bodies, bodies that have been called amino bodies here.
2379 Urea, it is well known, in the presence of an acid and a nitrite, decomposes the nitrous acid of the nitrite, liberating three substances, nitrogen, water and carbonic acid gas, and I believe that nitrites taken into the stomach with our food, are very largely if not completely decomposed in the stomach in this way. There is another way in which nitrites may become disposed of, and that is by the process of oxidation. There is always air in the stomach, and during the process of digestion in the stomach, the nitrites may be converted by oxidation to nitrates. This is another method of disposition, and, finally, when the nitrites pass,—if any escape these actions of the stomach—pass on into the intestines, they meet with certain microbes, some of which have the power of destroying them. The so called denitrifying bacteria, which would break them up, completely destroying them, and they, therefore, are further eliminated from the food, if they have not already been destroyed in the stomach.

Q. Have you made any experiments with animals to ascertain if met-hemoglobin is produced in the blood by small amounts of nitrites taken internally? A. Yes, I have.

Q. Well, will you please tell us what these experiments were?

A. I gave small doses of sodium nitrites to guinea pigs, and to white rats.

Objected to as irrelevant and immaterial.

The Court: He may answer. First, let me ask you, is there any urea in the white rat and the guinea pig.

The Witness: Yes, presumable there is.

Mr. Butler: What is the fact, Dr. Haines.

The Witness: I do not know from my own personal observation, but the literature states that urea is present, generally in the fluids of mammals, and therefore, in accordance with that—

Mr. Butler: In the stomach?

The Witness: I selected these guinea pigs, and I fed them in the same way, and kept them all in the same manner. To three of them, I gave every day small doses of sodium nitrites; to the other three I did not give any sodium nitrite. I
2380 gave a quantity of sodium nitrite to each guinea pig each day, corresponding considering the difference in the

weights, the body weights, equivalent to about one half a grain of sodium nitrite to a man weighing about 150 pounds. At the same time I selected these white rats, and I kept them all on the same food, and the same way. To three of them I gave small doses of sodium nitrite. To the other three I gave nothing. The three that I gave the sodium nitrite to, received on an average considering the difference in body weight, about a grain of sodium nitrite each day. This treatment was kept up for fifteen weeks. At the end of that time the animals were killed, all of them. The six guinea pigs, and the six white rats. I examined the blood of some of these animals that had been given nitrite for methemoglobin by the spectroscope. I was unable to find any methemoglobin present. I gave the internal organs of these animals to Dr. E. R. Lacount, colleague of mine in the Rush Medical College for further examination, to determine the production of methemoglobin, still further.

Q. Is Dr. Lacount present here?

A. He is present in the room.

Q. I want to ask you Dr. Haines, if you and—if it is the ordinary practice of gentlemen of your profession to make these experiments with the lower animals in order to arrive at some conclusion as to the effect of poisons and things of that kind.

Mr. Butler: I object to that as irrelevant and immaterial.

The Court: He may answer.

A. Yes, it is not only common, it is universal. We are obliged to do it. We have no other means of reaching conclusions that are absolutely definite as we have with experiments with the lower animals.

Mr. Butler: The question was was it customary. The doctor said it was, and then added that we are obliged to kill to reach absolutely definite conclusions, which part of his answer we move to strike out, as not responsive, as invading and violating the rights of a witness upon the stand.

The Court: I will let him answer.

Mr. Butler: The motion is to strike out.

2381 The Court: I will deny the motion. Go on.

By Mr. Elliott:

[A]. Doctor, we have had a lot of questions here about adding substances to foods. I will ask you what is your opinion as to the advisibility of adding substances to foods.

Mr. Butler: I will object to that as irrelevant and immaterial.

The Court: Objection is sustained.

By Mr. Elliott:

Q. Assuming that the flour in this case was bleached by the Alsop process, and, as a result of that bleaching the flour contained 1.8 part per million of nitric reacting material, and that bread made from such flour contained all of the nitrite reacting material that was in the flour. What is your opinion as to the possibility of harm from the constant daily eating of such bread.

A. I do not think it could produce the slightest harm.

Q. Now, under the assumption of my last question, what would you say as to the possibility of such bread, in reference to these nitrites producing any effect whatsoever upon the system?

A. I do not think it would have the slightest effect of any kind on the system.

A recess was then taken for five minutes.

Cross-Examination

By Mr. Butler:

Q. Have you written some works, doctor, along the line of your profession? A. Yes.

Q. Name them?

A. In conjunction with Dr. Frederick Peterson, of New York, I have edited and partially written a book on medical jurisprudence, and toxicology, and I have written a part of another book, namely, Allen McClaine Hamilton's "System of Legal Medicine".

Q. I have been the proud possessor of the latter work for many years.

2382 [—]. At that temperature will urea and nitrites react within an hour of time?

A. I know that the reaction occurs within half an hour, at body temperature.

Q. Is it not true that it requires 140 degrees for an hour, and 24 hours at body temperature.

A. Not according to the results I have seen.

Q. Have you, yourself, conducted the experiments?

A. No. I have seen two of them performed.

Q. Now, do I understand that urea is the principal thing that gets rid of the nitrites in the stomach?

A. I am not sure. I believe it is one of the bodies, but I—

Q. Are you sure it is one of the bodies?

A. Yes, I feel confident it is.

Q. Are you sure it is always present in the saliva?

A. Good authorities say it is.

Q. Oh, no, no, no. Very good authorities have made very great errors, in our profession, and I mean the legal profession. I want to ask you if Walter S. Haines says that he is sure that urea is a substance which is found always in normal, healthy people's saliva.

A. If you wish my answer from my own personal determinations I should say no, because I have made no determination. But, if you wish me to answer from—

Q. (Interrupting) I told you I wish your knowledge on the subject, and not the authorities.

A. Personally I have never detected it: I have never looked for it in the saliva.

Q. Nitrites vary in amount in the saliva of the same human being from time to time, during the day?

A. Yes. They fluctuate quite widely.

Q. Especially in the morning, after you have been asleep where you have not been secreting much saliva, and the juices of the mouth have not been very abundant, or active for a good while, then when saliva starts, there is apt to be more nitrites.

A. I do not know that, personally. I have never made that test.

2383 Q. Now, you are connected with the pure food law in Illinois in some way, in an official capacity?

A. Yes, I am.

Q. You did not mention that in direct, did you?

A. No, I do not come here as a representative of that body.

Q. Well, you do not come here as the representative of any of the bodies you mentioned, do you?

A. No. But I mean I do not come in any way to represent or commit that body.

Q. You do not want your testimony here in favor of the non-injuriousness of that bread, to be taken as the view of that body. A. That is my view, yes.

Q. That is what I mean. I am very well satisfied if it be so understood. What is a deleterious substance, as applied to the adulteration of food? I do not mean, now, to go off into minute quantities or anything like that. What is applied to deleterious foods. Is it the same as poisons in your judgment.

A. Yes, strictly speaking I should say it is the same.

Q. So, there is no substance, then, in your judgment, that could not be properly called "poisons" if it was deleterious?

A. Yes, strictly speaking I should consider them the same.

Q. Are nitrites, in appropriate quantities, poisonous substances? A. Yes, they are.

Q. Such nitrites as NO2 gas, and nitric acid and nitrous acid and the nitrogen trioxide if put in flour are of that char-

acter? I am now speaking qualitatively and not quantitatively. They are poisons.

A. I cannot quite accept all the premises of your question.

Q. I will relieve you from any embarrassment upon that subject and ask you this question. Assuming that the bleaching of this flour that was seized introduced into it nitrites by means either mediately, or directly, or NO2 gas, HNO2, N2O3 and so on. Assume that. Now, are those substances so produced qualitatively poisonous and deleterious in character as distinguished from quantitatively?

A. I do not know positively what substances are produced by the action of the gas in bleaching flour, but assuming that they are nitrites I should say that qualitatively—not quantitatively,—they are deleterious, yes.

2384 Q. And poisonous. A. And poisonous.

Q. So, that it is very important that we understand these just alike, doctor. I simply want your definition, now, as to the character of substances. Assuming that there are nitrites added to flour by bleaching then you, as a toxicologist say that qualitatively those substances are both poisonous and deleterious.

Mr. Scarritt: We object to that as repetition if your Honor please.

The Court: He may answer it.

The Witness: I beg your pardon.

By Mr. Butler:

Q. Both poisonous and deleterious?

A. Yes. I accept that.

Q. So that, we will go one step farther. If this act of Congress denounces food as adulterated which has added to it from the outside any substance of a character—that is, qualitatively—which is poisonous or deleterious, and, if it is true that this bleaching adds to the flour and the bread made therefrom a substance or substances of that kind, then, you agree with us that this food is adulterated, do you not?

Mr. Scarritt: We object to that, if your Honor please, as a comment on the law.

The Court: He may answer.

A. No, because I think the whole decision of the question rests upon the quantity.

By Mr. Butler:

Q. You misunderstood me. I ask you to assume that the law prohibits the adding of any substance of a character—

that is, which is qualitatively poisonous—Now, assume that. I don't ask you to pass upon that, because we will have to ask Judge McPherson to pass upon that. Assume that the law so says. Then you say that, if it is true, as the Government contends here that these nitrites are added to
2385 the flour and the bread, and that also be the fact, then your mind readily admits the conclusion, does it not, that the food substances are adulterated?

Mr. Scarritt: We object to that as invading the province of the jury, incompetent, irrelevant and immaterial.

The Court: He may answer.

The Witness: Accepting your hypotheses?

Mr. Butler: Yes.

A. I must agree to the latter.

Q. And, of course you are not responsible for my hypotheses. That is for us. A. I do not agree with you.

Q. We understand that perfectly well. Did you give any rats enough nitrite, so that it would be gross enough to find the methemoglobin in the blood?

A. I gave them enough nitrite so that, if that had been added to their blood, out of the body it would have produced methemoglobin.

Mr. Butler: I move to strike that out.

The Court: It may stand.

By Mr. Butler:

Q. You gave some nitrite to some rats, and you tried their blood and did not find any methemoglobin. Now, did you give them more nitrites and more nitrites, and more nitrites, and more nitrites until you got enough to find the methemoglobin?

A. No, I did not.

Q. Did you have any more rats or any more nitrites which?

A. No, I had no more rats. My experiment was not conducted on that line. I wanted to see whether if nitrites were kept up, in small quantities, over a long period of time, whether there would be a production of methemoglobin.

Q. Is it a well known fact, in your profession, that nitrites in the right amount and concentrated, will produce methemoglobin in the blood of human beings?

A. Yes. That is true, if given in sufficient amounts.

Q. That is well recognized isn't it. A. Yes.

[A.] And the change of the hemoglobin to methemo-
2386 globin is, to the extent that it takes place, injurious?

A. Yes. It is not normal.

Q. And, therefore, injurious.

A. I presume you would say it is not wholesome.

Q. Therefore, if it be true in fact—and I ask you to assume that it is true, in fact,—that nitrites, added to this flour, and in the bread, will change some of the hemoglobin to methemoglobin, it is, therefore, possible that there is an injury to the extent that it takes place.

A. Even accepting your view that some methemoglobin is formed, I should not be willing to say that small amounts formed would be injurious.

Q. It would tend to injure. That is, it would tend? It would not be normal, and it would rob the blood of that much power, wouldn't it?

A. It would not be normal, but the methemoglobin is restored to its normal condition fairly soon.

Q. Now, be perfectly fair with me, will you, doctor?

A. I am trying to be. I am trying to be fair with you and myself.

Q. Now, to be very careful about this,—the changing of the hemoglobin to methemoglobin,—now, I am speaking in the gross,—is injurious and may cause death?

A. Yes. If it be in sufficient amounts.

Q. Now, just where the death might occur might vary with individuals, or with the same individual under varying circumstances? A. I presume that would be so.

Q. Undoubtedly true isn't it? A. I think so.

Q. The most important function of the blood is to carry out the germs of the tissues. To sustain life.

A. Yes. I presume that is its—one important function.

Q. One of them at any rate. It is very important?

A. Surely.

Q. Should that power of the blood be impaired, even temporarily it is pro tanto a weakening of its power.

A. Yes, to the extent that it is impaired.

Q. And, therefore, if it be changed at all it would be
2387 impaired some, and is it not an impairment of one of the most vital fluids and tending to injury, doesn't it?

A. Yes, considered aside from all other factors.

Q. Viewed in its own light, in the light of that state of facts, other things being equal.

A. Without any further explanation.

Q. Yes. A. Without any further considerations.

Q. Is a toxic substance a poisonous substance.

A. Yes.

Q. They are interchangeable.

A. Yes, they are used interchangeably.

Q. And in the language of the works of scientific gentlemen toxic substances,—a toxic alkaloid, is the same as a poisonous alkaloid. A. That is correct.

Q. And, in the common use of language by the people, by scientists certain substances are known to be, spoken of generally as poisonous without idea of quantity? A. Yes.

Q. With the laity,—with the people generally, just as—

A. Such is the case.

Q. Well, I find this statement in your book, "System of Legal Medicine." on the third page, under the chapter, "Alkaloid, and other organic poisons," I find this statement.

"The following chemical formulae of a few of the most important toxic alkaloids." That means poisonous alkaloids does it not.

A. Yes, it does.

Q. "Are as follows" And then follows a list, aconitine, colchicine gelsemine, morphine, nicotine and strychnine. Now, in that paragraph, the idea of quantity is not, I think suggested, but you designate the substances as "toxic alkaloids".

A. I can explain the reason for that.

Q. It is a fact? [A.] I am trying to get at the fact that, in the proper use of the language, certain substances are often even by scientists in their own works called "poisonous substances". Am I not right, without the idea of quantity being interjected each moment.

A. Oh, yes. It is understood that the quantity is the governing factor, and we therefore do not repeat it every
2388 time.

Q. So by the understanding of your profession, as well as of the laity, as you are able to glean it, in your study and in your literature, and in your great works, is, that certain substances are spoken of and considered as poisonous substances in and of themselves and inherently so, as distinguished from foods and wholesome substances.

A. No, that is not quite correct.

Q. Not quite correct? Can it truthfully be said that no poison is added to food if strychnine be added to it.

A. It would depend a good deal on the way in which the term is used.

Q. Yes, but in the—now ordinarily wouldn't you say that if you analyzed some food, and found in it, we will say strychnine,—that is not normal to foods at all, is it ever?

A. No.

Q. You would say strychnine which is about the color—you get the reaction simply by color don't you?

A. That is one of our tests.

Q. That is one of the good ways, isn't it. A. Yes.

Q. Now, if you found a strychnine color, as the language is ordinarily used it would be correct to say that you found poison in the food, wouldn't it, and it would be untruthful to say you found no poison in the food, would it not.

A. Yes, ordinarily.
Q. That is so.
A. It would be correct, but there are conditions when it would not be correct to say,—

By Mr. Butler:
Q. (Interrupting) I understand you perfectly.

Mr. Elliott: Let him finish.

Mr. Butler: He says there are conditions. I am not electing to go into those conditions. I am not speaking of the popular and customary use. And doctor, to make this more concrete, now, if you were to send one of your associates, or subordinates, students to ascertain whether or not there was any poison in food,—just the "There is some food, in that sack or laboratory. Examine it for poison;" that young man found a strychnine reaction, and came back and said to
2389 you that he found no poison,—just made you a note, saying "Dear Professor: I found no poison on the suspected specimen." You would think that he had misrepresented the truth, don't you, if he had found the strychnine reaction —wouldn't you.
A. Yes, without any other conditions known, I should say that he had misrepresented.
Q. Now, that is, is it not, Dr. Haines with respect to a large number of substances, aside from strychnine.
A. Yes, it is, under some circumstances.
Q. Prussic acid for example?
A. Under some circumstances, yes.
Q. I mean, comparable. Prussic acid and corrosive sublimate, and the more poisonous nitrites and so on?
A. I should not put the nitrites in the same category at all as the others.
Q. They are not so toxic?
A. No, and they are so widely distributed so commonly found.
Q. I said certain nitrites, certain of the known deadly ones, if there are known deadly ones.
A. I do not think that one nitrite is more deadly than another nitrite.
Q. I did not know about that. I thought the amyl nitrite a couple of drops of that, doctor Kempster told about he had so much trouble with the patients in the lunatic asylum or sanitarium that he had charge of,—I thought that was a pretty bad kind? Are they all as poisonous as that, and as toxic?
A. Yes, I think they are. The only reason why amyl nitrites I think produces more decided effect is, is that it is given by inhalation, and therefore does not pass through the

eliminating processes that occur when the other nitrites are given by the stomach.

Q. You argue, do you, that because we have been eating some all the time, and our fathers and mothers have done it before us, and have found it present in our tissues some place, that, therefore, it is not injurious, and may be added to our food without danger—with immunity?

A. I do, I do indeed.

A. Are there certain disease germs practically always found in the saliva?

2390 A. Not as disease germs.

Q. Well, there is the pneumonia cocoi usually in the saliva?

A. Yes, but to that individual it is not—

Q. Now, let me get one thing at a time. I will give you a chance to explain and give your conclusion, but, are they usually found in the saliva? A. Yes, they are commonly found.

A. The poisonous germ of tuberculosis very often present in the system?

A. No, not commonly. They may be found.

Q. Oh, very generally; very widely?

A. As a rule the tuberculosis is found very often in the body, but the germs are not commonly found.

Q. Would you say that we breathe the germs in with the air— the tubercular germ in the city life we lead?

A. Yes, and they are strained out.

Q. I am not asking you how nature deals with them. I am not asking you that at all, but I am asking you whether or not they are in the air? A. Yes, they sometimes are.

Q. They are apt to be about Court Houses and streets? And street cars and so on?

A. Yes, they are. They are often present.

Q. They are dangerous to life, and it is one of the world's greatest activities to clean them out of the air, isn't it?

A. Yes. To prevent their getting into the air.

Q. Well, that is the same thing. And it would not be argued, would it, that the human race acquired immunity from these things that we breathe, when we get up in the morning, when we go to the Court House, and go back to lunch, and when we go home at night—it would not be argued that we are immune, or acquire immunity from those, would it?

A. Yes. We acquire a very great degree of immunity as to it.

Q. Then, it is a mistake for us to try to keep the tubercular germ out of the air, or is it one of mankind's greatest achievements for the preservation of the human race that we are, at last finding some way to lessen those things in the air.

A. There are two views to that question.

Q. What is yours?

A. I am not a pathologist, nor a bacteriologist. That
2391 is a question of pathology and bacteriology, and that is not my province.

Q. I will withdraw that. Are there not other disease germs constantly breathed by us who live in urban places all the time that we do breathe.

A. There are disease germs very frequently present in the air, in the dust.

Q. In the dust and the [—] is in the air, and we take them in?

A. They are present every now and then.

Q. Along with the nitrites?

A. But the condition is entirely different.

Q. I know; I understand there are different causes. Now, it would not be argued that, because our fathers breathed the polluted atmosphere disease bearing germs, and their fathers and so on, from time immemorial, that the human race had acquired a tolerance for those germs, would it?

A. Yes, the human race has acquired a very considerable tolerance for those germs.

Q. But it would also be the part of wisdom, would it not, viewing health, having regard to health, to eliminate the germs from our atmosphere,—the disease germs I mean.

A. If we could get rid of them all finally and conclusively. I presume it would be.

Q. Well, now, if we could only get rid of half of them wouldn't that be a good idea? A. It might be.

Q. Well, don't you feel reasonably certain, with that degree of confidence that Christians are accustomed to resign themselves to the fate of their Maker,—don't you feel, if we could clear this atmosphere of half the disease germs that are there, don't you feel reasonably certain it would be a good thing for the human race?

A. I presume it would be desirable to remove the disease germs, but that is a point that I am not competent to pass upon. That is a question of pathology, and bacteriology, and they are quite at variance with the field that I have
2392 studied. Germs are in no way comparable to the nitrites.

Mr. Butler: I move to strike that out.

Mr. Scarritt: I object to it.

Mr. Butler: May it please the Court, if this witness is to be permitted to argue this case to the jury every time I ask him a question, as to whether bacteria germs are comparable to a nitrite in flour—

The Court: Yes, the last part was hardly responsive.

Mr. Scarritt: We except to the ruling.

By Mr. Butler:

Q. Now, doctor, I will ask you frankly, do you feel obliged while you are upon the stand here, to argue the effect of any answer you may make to the jury?

Mr. Scarritt: We object to that question.

The Court: He may answer.

The Witness: No, only I do not wish to be misrepresented.

Q. I am not going to misrepresent you.

A. I do not want to have my views go to the jury in a way that are not correct.

Q. Now, if it is a good thing to keep diptheria out of the air, you are willing to state that, without making a speech, that it would not be good to take nitrites out of the air? Now, I want to find out whether you are going to insist upon arguing, by way of argument, instead of by way of imparting your professional learning in this case. So far, we have gotten along pretty well, but I will say I do not want you to argue in favor of bleached flour when I am asking you about these scientific matters. If you feel that you must, you and I will terminate our relations very shortly.

Mr. Scarritt: We object to that because, unless there is some reference to the nitrites we are talking about, the question has no relevancy to the issues in this case.

The Court: The objection is overruled. He may answer.

The Witness: Did you ask me a question.

By Mr. Butler:

Q. I will ask you one now. Does the human system become accustomed to the toxin, the pneumo coccus,—

2393 Mr. Scarritt: Same objection.

The Court: He may answer.

A. Yes, it does.

Q. And acquire practical immunity for a time?

A. It does.

Q. And, having due regard for health, do you think they should be put in our food, put in our rooms at night, keep on increasing and increasing on the doctrine that, because we are used to them they would not hurt us?

Mr. Scarritt: Objected to because it has no relevancy to the issues in this case.

The Court: Objection overruled.

Mr. Scarritt: We except.

The Witness: I do not know that I followed your question.

Q. Is there any immunity known to pneumo cocci, scientifically and professionally?

A. Yes. After a person has received the toxins of pneumo cocci, there is an immunity established for a certain length of time.

Q. And then? A. Then he loses that immunity.

Q. So that it is a part of wisdom to destroy the pneumo cocci, and to keep them out of our air, and food, isn't it?

A. Yes, it is.

Q. What is it? A. Yes, I consider it so.

Q. And that is true, relatively of all disease bearing impurities in the air, isn't it?

A. That is my own view. I am not a pathologist as I said before.

Q. Now, your answer that this bread, made from this bleached flour would be entirely harmless, was based upon the idea of the quantity of nitrites assumed to be in it?

A. Yes, to a great extent.

Q. Well, wholly, wasn't it? If there is enough nitrites it might become injurious.

A. Yes, if in sufficient amounts. It might then become injurious.

Q. Now, as to whether or not it would be injurious to
2394 me would depend upon my condition and power or resistance? A. Not this quantity.

Q. No, no, no. Whether a given kind of nitrite will depend upon the power of resistance, will it not?

A. Yes, as to the amount that might be required, it would depend upon the individual to a certain extent.

Q. Some people are very sensitive to poisons are they not—bcome sensitized so to speak, highly?

A. Some are more sensitive than others.

Q. Very much more?

A. Yes, there is a considerable degree of difference.

Q. And a dose of nitrites that might be wholly uninjurious to me might strike down just a big a man and just as healthy a man and kill him.

A. No, I do not think that the quantity that would not be injurious to you would kill another person.

Q. It would be relatively harmless, or slightly harmless that I could take without danger of life, I will put it?

A. Yes, a quantity that you might take without killing you might kill another person.

Q. Now, the toxicity of certain substances are affected by circumstances surrounding, and the presence of other substances?

A. Yes. The surroundings have something to do with the toxicity to some extent.

Q. Morphine is sometimes given as medicine, is it not.

A. Yes.

Q. Apomorphine? A. Very rarely.

Q. How. A. Very rarely.

Q. Occasionally. A. Yes.

Q. Under proper conditions nitrites may multiply the toxicity of apomorphine, two or three thousand per cent, may it not? A. I do not know that personally.

Q. Well, you understood it may be increased by it,—do you not?

A. I have seen a statement to the effect that the action
2395 of apomorphine may be increased by nitrites, but I do not know, personally.

Q. Didn't it state it to the degree of six thousand per cent?

Mr. Scarritt: He says he don't know, if your Honor please. And we object to it.

Mr. Butler: I am trying to refresh his recollection.

The Court: He may answer.

Q. Six thousand per cent?

A. I don't remember the per cent, but I do not think that figure is correct.

Q. Sir.

A. I don't remember, but I do not think that figure is correct.

Q. What figure do you think is correct?

A. As I recollect it it was perhaps three or four hundred per cent, but I do not think it was six thousand per cent.

Q. You would not be clear about that, would you?

A. No, I am not sure about it.

Q. Now, suppose I was unfortunate enough not to have any urea in my saliva, and the nitrites added to this bread on Mr. Elliott's hypothesis would not be neutralized by the urea, would there, to the same extent as if I had it in my saliva?

A. If you did not have it in the saliva, and did not have it in the gastric juice either, so far as the urea is concerned, of course that element of neutralizing nitrites would be eliminated.

Q. Do you agree that it would be perfectly safe, if they would spray the flour with urea after it has been bleached, so as to neutralize the nitrites before we use it to make bread?

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

The Court: He may answer.

Mr. Scarritt: We save an exception

Q. Do you think that would be a good thing as Dr. Webster did?

A. No, I do not think it would be a good thing, because we should be introducing more urea into the system, and we do not need it.

Q. But, haven't we been secreting urea ever since Adam was young? A. Yes, that is quite true.

Q. And haven't we acquired perfect tolerance for urea?

2396 A. Certainly so.

Q. Then urea is not any worse than a nitrite, is it?

A. No.

Q. Then, if it is bad to introduce additional urea into the system by spraying it on the bleached flour, why isn't it bad to introduce nitrites into the flour that they make in bleaching flour?

A. Because nitrites accomplish some useful purpose and the urea would not.

Q. What useful purpose do the nitrites accomplish?

A. I don't know as I could say nitrites, but the bleaching of the flour is a useful purpose, and the nitrites come, if there are nitrites from accomplishing that useful office.

Mr. Butler: I move to strike out this statement that this bleaching of flour is useful.

The Court: It may be stricken out.

By Mr. Butler:

Q. Now, that is not a question in toxicology, is it, doctor?

Mr. Scarritt: We object to that.

Mr. Butler: Nor pharmacology nor pathology, nor histology nor legal medicine?

A. I did not wish to be misunderstood.

Q. And I don't wish you either, to come in here and say that it is useful to bleach flour. That is not what you were called for, and I did not ask you that. Now, how many times have you defended the side of the flour bleachers in various controversies?

A. Twice.

Q. Where?

A. At Fargo, North Dakota, and at Washington in the hearing before the Secretary of Agriculture.

Q. At Fargo it was in a case of the Russel-Miller Company against Ladd, the pure food commissioner, in which they attempted to injoin him from enforcing the Pure Food Law of North Dakota against adulterating flour by bleaching it? That was the place, time, and issue, wasn't it?

Mr. Scarritt: We object to that as incompetant.

The Court: He may answer,—if I understand he is
2397 merely identifying the time and the case.

The Witness: I am not sure about the title of the case.

Q. It was a milling company up there? A. Yes.
Q. They tried to enjoin the Pure Food Commissioner, and you are sure of his name.

Mr. Scarritt: We object to that as incompetent, irrelevant and immaterial.

A. I know it was a case of some milling company against either the state or the Pure Food Commissioner.

Mr. Butler: How long did you remain there giving your testimony and aiding the plaintiff in that suit?

Mr. Scarritt: We object to that as immaterial.

The Witness: I think I was there probably—

Mr. Butler: Practically the whole trial?

A. Oh, no, Oh, no. Probably—possibly five days. I am not sure. It may have been four. I could not tell you. It was by no means during the whole trial.
Q. How long did you remain during the hearing at Washington? During the whole hearing? That was on the occasion Secretary Wilson heard the millers on that matter, and you took part for the bleachers?

Mr. Scarritt: We object to that as immaterial.

The Court: I will have to say this, Judge Scarritt. That pretty nearly every qfestion that is asked, you say something, and I do not know what it is. Almost every question that is asked you say something, and I do not know what it is. I do not know what it is you say. I say now and here that if it should ever become necessary or desirable to have a record on this matter there will be no exceptions allowed that I have not had brought to my attention.

Mr. Scarritt: To this line of testimony we have objected all the time.

The Court: You have been objecting all the time?

Mr. Scarritt: And still want to object.

The Court: I did not hear it, and the record will not
2398 show things I cannot hear.

Mr. Scarritt: Your Honor has ruled on most of them.

The Court: You cannot sit within a few feet of the stenographer, and make up the record on me. I do not mean to say you are doing it. Go on.

Mr. Scarritt: We would like to have a ruling on this.

The Court: The objection is overruled.

Mr. Scarritt: We except.

By Mr. Butler:

Q. If you have the question in mind, Dr. Haines, you may answer it. I think I asked you whether you stayed during the whole hearing before the secretary when the bleachers and the government pure food men had the hearing there about this flour bleaching?

A. Yes, I was there during the entire hearing.

Q. You have attended this trial—you have been here about three or four weeks altogether, haven't you?

A. Oh, no. I was called down—

Q. How long have you been here. No matter about being called down. How many days have you been here.

A. I could not tell you, offhand.

Q. Is it less than twenty? A. I think so.

Q. Your testimony in direct examination, aside from your qualifications, did not consume twenty minutes, did it?

A. I did not note the time. It was not long.

Q. Now, before the Secretary of Agriculture, did you promote the idea that urea in the stomach was one of nature's defenses to nitrite? A. No, I did not.

Q. Did you before Judge Pollock, at Fargo?

A. No, I did not.

Q. Did you ever, on any other occasion, in your studies and researches of this.

A. No. It is something that has come to me within a comparatively short time.

2399 Q. Since this trial commenced? A. Yes.

Q. Do you remember when during the trial?

A. Yes, I can tell you exactly how it happened. When I heard the testimony concerning the disappearance of nitrites during the process of digestion in the stomach, it became evident to me that there was something there that destroyed the nitrites.

Q. Whose testimony was that?
A. It was the testimony of various witnesses.
Q. Dr. Wesener? A. Dr. Wesener.
Q. Teller? A. Professor Sayre.
Q. Teller?
A. And Prof. Teller, and Prof. Emerson, and I knew of the experiments of Dr. Webster, and I felt convinced that there was something there that destroyed the nitrites, and upon reflection it come to me suddenly that the destruction was due to the well known action of urea and other similar bodies upon nitrous acid and nitrites in the presence of acids.
Q. And suppose that testimony was not reliable. Suppose Wesener's experiment was not reliable, about the disappearance of the nitrites. Then how about your urea.

2400 Mr. Scarritt: We object to that as a comment on another witness' testimony.

Q. Suppose it was not true. Suppose those facts were not justified, then what?

The Court: He is not commenting upon the other witness' testimony. He may answer.

Mr. Scarritt: We save an exception.

By Mr. Butler:
Q. Suppose it was not true that the nitrites disappeared from the stomach. Then what?

Mr. Scarritt: Same objection.

Mr. Butler: Then your urea theory would not do, would it?

A. If, as a matter of fact the nitrites do not diminish in amount in the stomach digestion, then my theory would of course, not be true.
Q. Are nitrites sometimes absorbed from the stomach into the blood? A. Yes.
Q. And if they had been absorbed before you pumped them out, you would not pump them out would you,—when you pumped out the stomach you would not pump out the nitrites, would you?
A. Oh, if they had been completely absorbed of course there would be none there to pump out.
Q. And that would render the theory that urea destroyed them worthless, wouldn't it?
A. No, sir, no. I think you misunderstood me.
Q. Many poisons get to the blood in much less than a half an hour, do they not, after being taken into the stomach?
A. Yes, a number.
Q. A large number? A. Not necessarily.

Q. Do they not, after taking into the stomach?
A. Yes, a part.
Q. And a large part? A. Not necessarily.
Q. In some cases does a large part of deadly poisons
2401 absorb within a half an hour?
A. A part, but by no means necessarily—
Q. (Interrupting) You did not hear my question.
A. I beg pardon.
Q. I asked you if it was true in some cases that a large part of poisonous substances are absorbed within a half an hour? A. Yes, sir, in some cases.
Q. How long does it take a drop of prussic acid, dropped on the tongue, to absorb in large part?
A. Part of it is absorbed very rapidly.
Q. The man will fall quicker than if he is shot, if there is enough of it on the tongue, wouldn't it Just as quick as if he is shot through the heart.
A. He will fall very rapidly.
Q. Now, would the safety of taking poison in food depend upon the character of other poisons taken in other foods?
A. I do not think I—
Q. Would the safety of taking poison in food added to it to make it look better, depend upon the character and quantity of poisons taken in other foods to make them look better, added to them to make them look better.
A. Did you ask me whether it would depend?
Q. Yes. A. Why, not necessarily so.
Q. Would it be a factor? For example I have taken all the poison I can stand in my butter, and my milk, and my corned beef, and cabbage, all that nature has provided a defense for, then, might it not be more dangerous, under those circumstances where my power of resisting the poisons has gone to the limit, to add some more poison to some other food to make it look better?
A. Yes. Under the conditions of your question, that is true.
Q. Now, is it not true that, common articles of diet, which we use, and which are known by gentlemen in your line of business to be adulterated by injurious substances like formaldehyde and chromate of lead, and copperas, and sul-
2402 phate, and nitrites, and so on. Is it not true that that joke may be carried too far, and injure the health of the people, where you could scientifically swear that no one substance was rendered injurious to health.

Mr. Scarritt: We object to that if Your Honor please if not pertinent to any of the issues in this case.

The Court: He may answer.

A. Yes, if there were deleterious substances in all the articles that you mention, they might produce a collective action.

Q. And render what would be harmless without it very dangerous? A. I should not say very dangerous.

Q. Injurious to health? A. Unwholesome.

Q. Unwholesome and injurious to health? A. Yes.

Q. Now, Doctor, I will ask you if it is not the greatest concern that we, of this generation have upon this earth, is to preserve the health of this generation, and the next succeeding one?

A. Yes, it is.

Q. And do you not think that pure food, unadulterated food, food free from added poisons is one good means of preserving the health of this race, and preserving this race for this earth?

A. Of course, my answer, I must know in what way you use the term "poison" there.

Q. I mean a little poison. Just a little to make it look better, and a little, and a little, and a little, in all things we eat; our milk, our buttermilk, our bread, our meat, and our preserves, our fruit, our coffee, and, to those wicked men who use it, our whiskey, and the other wicked men who drink it, arsenic to the beer. Do you think that that sort of thing can be carried on to such an extent that the safety of the race in respect to health will be at stake. Do you think that possible, without putting a deadly dose in anything.

A. Yes. It is. I would be glad, if you would let me
2403 express my opinion.

Q. I will ask you to answer my question?

A. Yes. I do not believe in adding substances that are deleterious to food.

Q. Now, formaldehyde is a deleterious substance, by nature, isn't it?

Mr. Scarritt: We object to that as being immaterial to this case.

The Court: He may answer.

The Witness: Yes, in sufficient quantity.

By Mr. Butler:

Q. So are nitrites in sufficient quantity.

A. In sufficient quantity.

Q. So is chromate of lead?

Mr. Scarritt: We object.

The Court: He may answer.

A. Yes, that is true.

Q. So is borax?

Mr. Scarritt: Same objection.

The Court: He may answer.

A. Yes, it is.
Q. Sulphites. A. Yes.
Q. Sulphates of copper?

Mr. Scarritt: Same objection.

A. Sufficient quantities, yes.
Q. Ammonium flouride? A. In sufficient amount, yes.
Q. Saccharine. A. Yes, in sufficient amounts.
Q. You do not agree that that is wholly harmless, do you. You think that is a deleterious substance, like these others.
A. In large enough amounts, yes. Not in small amounts.
Q. Now, if it should appear to you that by adulterating foods to make them look better there were 15 poisonous substances added to our breakfast, seventeen to our dinner, and twenty two to our supper, making fifty five doses per
2404 day of these substances, each one of which you would say in appropriate doses will have no injurious effect—now, if that sort of thing happens, don't you think it is time to stop adding any more poisons to our food.

Mr. Scarritt: Same objection if your Honor please.

The Court: He may answer.

A. It depends upon the amount that is present in each of these foods.
Q. Well, let the amount in each one now, of the 55 doses, per day—and I will not take time to enumerate, the customary articles of diet,—you are familiar with the things that are used for adulteration, I suppose?
A. I am with most of them.
Q. Now, these things that I have mentioned have been used within your knowledge or by common repute.

Mr. Scarritt: Same objection.

A. Yes, they have been.
Q. And still are used in various things. Now, let us say, doctor, that in each of the fifty five quantities which I have called doses, there was just as much of the poisonous substance as you could say, standing alone, was not injurious. Now, assume that to be the fact.
A. The upper limit?
Q. Which would reach the limit of safety. A. Yes.
Q. Now, will you not say that, under those circumstances, the adulteration of the whole food to the extent of fifty five

doses was a great attack upon public health, and very dangerous? A. Yes, under those conditions.

Q. Now let us come down a little. Suppose each dose was only half up to the limit of safety. Your answer would be the same? That it would be injurious to health because you had twenty seven doses.

A. We do not know surely that those different poisons pile up on each other.

Q. Let us take the same one, then.

A. Yes, if you take the same one, that is true.

2405 Q. Chromate of lead? A. Yes, that is true.

Q. So as to get rid of the antidote effect. Some might antidote the other, that is your idea. A. Yes.

Q. But we will get rid of that by taking the some one and then you think it would be very unwise, do you not to add poisons to food, to such an extent, of various kinds, that we would have to rely upon one antidoting the other. You think that would be awful. A. That would not be desirable.

Q. It would be awful, wouldn't it?

A. Yes, I should think so.

Q. You think the poisoning of people is a very bad thing, don't you, doctor? A. Yes, I certainly do.

Q. Either poisoned to death, or at all. A. Certainly.

Q. So that if we were to take one tenth of the limit of safety, and there are fifty-five doses in a day's diet, surely you would say it would be injurious to health, and poisonous to the public, wouldn't you.

A. Under those conditions it would be.

Q. Therefore, does it not follow, from the standpoint of public health, the only safe course is to exclude the addition of poisons to the food, in every possible instance, and every possible form, and with respect to all the quantities?

A. No, I do not agree to that.

Q. You do not agree to that? A. No.

Q. You think that the public requires that poisonous substances be added to our foods?

A. If they serve a useful purpose.

Q. Would a commercial purpose justify putting poison in the stomachs of my children?

A. I do not know as I should say a purely commercial purpose would, but commercial purposes are usually dependent upon the personal advantage.

Q. You are familiar with the general appearance of wheat flour? A. Yes.

2406 Q. Now are you answering all my questions candidly, and you know about the bread of the country, how it looked before 1904, or 5 or 6, whenever it was that the bleaching was introduced in this country, don't you? A. Yes.

Q. Now, assuming it to be true, as Dr. Allway told us it was true, the chemist from the Agricultural College of Nebraska whom I have no doubt you met,—assuming it to be true that the only excuse in God Almighty's earth to reduce the coloring to the degree that it is now reduced,—now, assuming that to be the naked unvarnished and unqualified truth, now, in view of your knowledge of how the foods are poisonous either by additions or decay or impurities, I want to ask you if you believe any such consideration as that would justify putting poisons into the stomachs of our people?

Mr. Scarritt: We object to that, if your Honor please, as having no relation to the issues in this case.

The Court: He may answer.

Mr. Butler: From the standpoint of health, always.

A. The color of the bread has much to do with its appetizing properties, and, therefore,—

Q. Just wait a moment, doctor. I want you to answer my question, either yes or no, or say that you don't know.

A. I cannot answer it yes or no.

Q. Well, let it go. We will not listen to the lecture upon color and appetizing effects.

That will be all Dr. Haines.

Redirect Examination

By Mr. Elliott:

Q. Dr. Haines, do you make a distinction between these substances that have been put to you like lead and formaldehyde, and I can't name them all, but those various substances Mr. Butler has been talking about, and the substances such
2407 as nitrite, as to properties, and so on, and if so, you may state what distinction.

A. Yes, I make a distinction between substances like lead chromate and formaldehyde, which are not naturally found in the body, and substances like nitrites which are naturally found in the body.

Q. You have stated to Mr. Butler that, qualitatively, nitrites, nitrous acid and nitric acid were harmful and poisonous.

Mr. Butler: Poisonous and deleterious.

By Mr. Elliott:

Q. Yes, sir, qualitatively. Now, I will ask you if that has any reference to whether such substances are necessarily harmful in appropriate quantities.

A. No, not at all. Quantitatively they may be absolutely harmless. They may be destitute of all harm.

Q. From your general knowledge I will ask you if you have any doubt as to the existence of urea in the saliva and in the stomach? A. I have not.

Q. What would be the basis on which you would approve of the addition of some substances to foods, and disapprove of the addition of others?

Mr. Butler: You mean poisonous substances, Mr. Elliott?

Mr. Elliott: Such substances as you have been discussing with the witness. I am not going into explanations.

A. Substances as are naturally found in the body, and to which the body is accustomed, like benzoate of soda, and nitrites, and saltpetre in small amounts, I should regard as not injurious additions. But, substances that are totally foreign to the body like chromate of lead, and formaldehyde, and the like, are in a different category, and I should regard as a very questionable desirability any addition. There are, I might say, conditions, however, in which I believe, even these substances, or rather formaldehyde, is used.

2408 Q. Will you give us your opinion,—the conditions?

A. I think, for instance, when it is impossible to get a pure milk supply—

Mr. Butler: Just a moment.

The Court: Pure. What?

Mr. Butler: Milk supply. This is a justification of putting formaldehyde in milk to make it better and I don't think that it is in this law suit in any form.

The Court: I will let him answer.

A. I think that when it is impossible to get a pure milk supply, and to keep it in a wholesome condition by proper refrigeration I believe that the addition of a little formaldehyde is better than to use that milk in an unsanitary, decomposing condition.

The Court: Suppose you put enough formaldehyde in it to keep it from souring from one, two or three days in warm weather.

A. If I may explain, Your Honor, I should not say to have it added at all, if we can keep it in any other way but if conditions are such you could not keep it by cold,—

The Court: Now, for instance, recently,—not in this town, because I like these hotels, here, but in an Iowa Hotel I had a glass of milk, and set it for five days in a hot window, and it did not sour. What would you say about that.

A. I should think there was too much added. That would be an excessive usage. I trust you do not misunderstand me.

The Court: It is a question of whether you would throw the milk away or put a little formaldehyde in it.

A. Yes.

The Court: Then it would practically come down to going somewhere else to get your milk.

2409 By Mr. Elliott:

Q. Is there any relation between the processes which established tolerance for drugs, and minute quantities of infectious diseases or disease breeding germs.

A. Well, in some cases I presume the mechanism is very similar. In others it is different.

Q. Under what conditions, Dr. Haines, would it be proper to say that strychnine for instance was not a poison.

A. If it was being given as a medicine in medicinal doses, you would not call it a poison.

The Court: For what; heart action?

A. For any purpose whatsoever, as for the heart, or to build up, or for any other additional purpose.

By Mr. Elliott:

Q. In its use in that way does it act as a tonic, could you tell us. A. Yes, it acts as a tonic.

Recross Examination

By Mr. Butler:

Q. Now, doctor do you think it is safe to leave it to the dairymen to say how much formaldehyde they will put in our milk?

Mr. Scarritt: We object to that as immaterial.

The Court: He may answer it.

The Witness: No, I do not.

Q. Do you think it is safe to leave it to any tradesman to say how much poisonous preservatives he will add to any particular food. A. No, I do not.

Q. Is carbolic acid usually found in the body?

A. Carbolic acid?

Q. Yes.

A. Certain derivatives of it are found in the body.

Q. Poisonous?

A. Yes, in sufficient dose carbolic acid is.

Q. Methyl mercaptan? A. Yes, I think it is.

2410 Q. The fact they are customarily found in the body would not justify the addition of them to food?

A. It would depend upon the quantity and whether any useful office was performed.

Q. But assuming that no useful office would be performed.

A. No.

Q. Except to sell goods?

A. If no useful office is performed I should not consider it proper.

Q. Now, there are noxious poisons are they not, in sufficient quantities.

A. In sufficient quantities.

Q. The body generates poisons, in it excretions?

A. Yes.

Q. Certain organs are there for the purpose of getting them out before they kill us? Isn't that true.

A. Yes, that is true.

Q. Now, the fact that they are present from birth to death in supposedly healthy human beings does not argue that we should leave it to merchants and others to add it to the foods if [—] could sell it better by adding it, only for that reason does it?

A. If that is the only reason, I should not consider it proper.

Q. Now, if you found one one hunderdth's part of strychnine in the stomach of a man who was dead could not you conscientiously swear you found poison in the stomach?

Mr. Elliott: I object to that as immaterial.

The Court: He may answer.

A. I should want to know the history of the case before I would be willing to report.

By Mr. Butler:

Q. Suppose I took a stomach down to your laboratory, and said "I suspect somebody has been poisoning this man and I want you to see if you can't find any poison", and you

2411 found 1/100 grain of strychnine, which is very much less than a medicinal dose, isn't it.

A. We sometimes give 1/100 of a grain, and sometimes give very much more.

Q. 1/60th of a grain is a medicinal dose?

A. Even give more than that.

Q. Could you conscientiously say you found poison in him. Would you say you had. Would you say you had not.

A. I presume that if I knew nothing whatsoever about the history of the case I should say I found poison there.

Q. How much hydrocyanic acid or prussic acid did you find in the stomach of Swope, who recently died.

Mr. Scarritt: We object to that as immaterial.

The Court: Yes, I think so.

By Mr. Butler:

Q. Suppose you found 1/200th part of a grain in the stomach of prussic acid, would you say you found poison in it?

A. I should have to know many surrounding conditions before I should be willing to say I did.

Q. So then if I took you a stomach and said "Here is a stomach, doctor. Is there any poison in it." And you found 1/200th part of a grain of prussic acid in it, you could not answer my question until I told you where I got the stomach.

A. I would like to modify my answer a moment ago. I did not observe sufficiently carefully the quantity indicated. I think if I found 1/200th of a grain, I should say I found poison, about prussic acid. It comes into the stomach from some foods and therefore—

Q. (Interrupting) That distinguishes it from strychnine.

A. Yes. 1/200th of a grain, I should think I would say I found poison, but I should want to know what food the person had taken.

Q. The most poisonous stuff known is aconitine?

2412 A. Yes, probably is the most poisonous of the deadly poisons.

Q. Now, my body weight of aconitine about 200 pounds, has toxicity, if administered, to kill every member of the human race, hasn't it.

A. I should have to make some calculations.

Q. I think it was the weight of ten men, two thousand pounds instead of one man?

A. We commonly believe that from 1/15 to 1/30th of a grain of pure aconitine may kill.

Q. And you have so reported in your legal medicine?

A. That is correct.

Q. And reported it to be the most deadly poison?

A. Yes.

Q. Now, if you found half that amount in the body, if such a thing is conceivable, you would think you found a poison in the body, wouldn't you?

A. Certainly should.

Q. And to say you did not would be misleading, would it not. A. It would.

Witness Excused.

Walter M. Cross, a witness for claimants, being recalled, was examined, and testified further as follows:

Direct Examination

By Mr. Elliott:

2413 Q. I hand you a flask, marked claimants exhibit 280, and ask you to state what it is, and where you obtained it, and under what conditions?

A. This flask contains some gas obtained from an Alsop bleaching apparatus, at the Rex mill, on the 25th day of June, 1910. It was obtained at the outlet or a plug near the agitator.

The Court: Between the electrifier and the agitator?

The Witness: Yes.

By Mr. Elliott:

Q. I will ask you if, when you obtained that specimen of gas, you asked the attendant that you might get it from the same place and under the same conditions as was the gas that was obtained by the Government's experts, when they visited that mill?

A. We asked the attendant to obtain this—

Mr. Butler: (Interrupting) I will object to the conversation.

The Court: Go on.

The Witness: From the same orifice, and he showed us the plug.

The Court: It is not necessary to describe the orifice.

By Mr. Elliott:

Q. Tell us how you got the gas in there.

A. We had a two-hole stopper in this flask, and a tube running to the bottom of the flask, one, and another just over the stopper, both tubes running through the stopper, of course, and they were air-tight. Then with an aspiration apparatus, we pulled through the air-tight connections from the plug that was inserted in this pipe which I mentioned before, the gas, first through the long tube—that is, blowing the gas from the Alsop bleacher in the bottom of the flask, and, on account of the fact it was warm, we held it up-side down, so it

2414 would fill the flask full, and we pulled two litres, or twice the volume of this flask, of the gas, from the Alsop bleacher, through it, so this was the pure, undiluted Alsop gas.

Q. Did you do anything other than you have stated? Was there any filtering, or anything of that sort, done?

A. No, sir. This was through air-tight connections, altogether.

Q. Gas, just as it come from the pipe? A. Yes, sir.

Mr. Elliott: We introduce this as an exhibit.

Mr. Butler: I would like to cross-examine, before this is received.

Cross-Examination

By Mr. Butler:

Q. When you say "we", whom do you refer to?
A. There was with me at the time Prof. Kizer, I believe.
Q. Who? A. Kizer.
Q. Where from? A. I believe he was from St. Louis.
Q. When was this? A. On the 21st day of this month.
Q. Who else? A. There was also Mr. Friend.
Q. Who is Mr. Friend? A. I don't know.

Mr. Scarritt: He was on the stand.

The Witness: I don't know anything about that. And there was a Mr. Mitchell.

By Mr. Butler:

Q. Who is Mr. Mitchell?
A. I don't know anything about that, other than I recollect his name was Mitchell.
2415 Q. A tall, good-looking man?
A. Yes, he was very fair looking.
Q. Go on. Was it the Alsop Mitchell?
A. I think it was the Alsop Mitchell.
Q. Go on.
A. I think there were just the four of us—Kizer, Friend, Mitchell, and myself.
Q. Where has the bottle been ever since?
A. I couldn't say where it has been all the time, but it was on the shelf in my laboratory part of the time.
Q. Is there a removable cork in the bottle?
A. No. I sealed it, myself, and marked it, there. It has not been opened.
Q. Is that cork sealed in, now? A. Yes, sir.
Q. With wax? A. White wax.
Q. When did you seal it? A. At the time.
Q. Out at the mill? A. Yes, sir.
Q. How much gas did you pull through that bottle?
A. A little over two litres, or twice the volume of the flask.
Q. What will the flask hold? A. A litre.
Q. So, you pulled through the bottle, twice its own volume?
A. Yes, sir.
Q. What for?
A. It just happened to be I had an aspirator that had that much water, and I let it run all out.
Q. You had an aspirator that contained that much water?

A. Yes, sir.
Q. Why didn't you have a larger aspirator?
A. It was one I happened to have. I don't know why I didn't have a larger or smaller one.
Q. The purpose of that was to exhaust all your air out of the bottle?
A. It was to get the air out of the flask; yes, sir.
Q. You had to get the air out of the bottle, did you?
A. The air had to come out of the bottle.
Q. And the gas in? A. Yes.
2416 Q. Now, suppose you didn't get all the air out of the bottle; then what?
A. I haven't thought about the contingency of that not all being out of the bottle.
Q. Suppose you had taken none out of the bottle. Then what?
A. The air had to be, in this case, I considered, all out of the bottle.

Mr. Butler: I move to strike that out.

Q. Now, suppose you hadn't taken any of the air out of the bottle; then what?

Mr. Scarritt: We object to that, if your Honor please. He said he did take it out.

The Court: He may answer.

Mr. Scarritt: We except.

A. I didn't understand the question.

By Mr. Butler:
Q. What effect would that have had upon that quantity,—the quantity of bleaching gas you got in here? Why didn't you just go and turn the bottle up-side down, and let the bleaching gas flow in? What did you want to go through this aspirating business for, if you wanted to get the air out of the bottle?
A. I wanted to get the air out of the bottle; certainly.
Q. Now, suppose you hadn't taken the air out of the bottle. How would that have affected your experiment, do you know?
A. With regard to what?
Q. With regard to what you got in the bottle.
A. With regard to whether I got bleaching gas into the bottle?
Q. Yes.
A. If there had not been any air taken out, no bleaching gas would have come in.
Q. So, if you only got half the air out, you wouldn't have got the pure bleaching gas, would you? You would have only

got it half full of bleaching gas, and diluted that much? Isn't that it?

2417 A. If half the air was taken out, then only that part that was taken out could be replaced by bleaching gas.

The Court: Is this bleaching gas heavier than air?

The Witness: When it was hot, it was lighter than air.

The Court: Couldn't you just pour it in, and drive the air out?

The Witness: When I pour it in relatively hot, it would drive the air out.

By Mr. Butler:

Q. Wasn't there pressure in the pipe? Wasn't there a blast of air going through the pipe all the time?

A. There was some pressure.

Q. And, without regard to whether the gas was lighter or heavier than air, if you had emptied your bottle, the gas would go up into the bottle, because, with the air out, there would have been no pressure, and you would simply have had a vacuum?

A. If I had exhausted all the air out of the bottle, and made a vacuum in there.

Q. Then the gas would have gone in there, under normal conditions?

A. The atmosphere would have rushed it in.

Q. It would have gone in there under the pressure, and the pressure you would have been the same in the bottle as in your pipe? A. Yes.

Q. Now, if this experiment of yours resulted in leaving some of the normal atmosphere in there, this would not show the density of the gas that was passing through the pipe at the time you made the examination, would it?

A. If very much atmospheric air was in the flask, it wouldn't show the density.

Q. It wouldn't, if there was any, and the more it was in there, the more it was diluting the gas? That's true, isn't it?

A. To the degree it was in there, it would dilute the gas.

Q. You do not pretend you got a vacuum in that flask by the aspirator?

2418 A. No, sir; it was not a perfect vacuum.

Q. If it had been a perfect vacuum, the air would have been withdrawn, would it not?

A. If there had been a perfect vacuum, there would have been no air in the flask.

Q. How many agitators were running when you were there?

A. As I understood it, there were—

Q. (Interrupting) Well, do you know? I will withdraw that question. Do you, yourself, know how many agitators were running—were receiving gas? Do you, yourself, by personal observation, know that, and not by what you were told?

A. At the time, there was no agitator—

Q. (Interrupting) Wait a moment. I ask you if you do know this. You know, or you do not. Now, which is it?

A. Know what?

Q. How many agitators were running?

A. Only so far as I could judge by the belts running, that day.

Q. You know that the gas might be turned off without stopping the agitator from working don't you? You know that the cock might be turned in the pipe, without knocking the belt off the wheel, don't you?

A. Yes, sir.

Q. So, you don't know how many agitators were receiving the bleaching gas, do you, yourself?

A. Yes, I knew how many were receiving it while I was doing that.

Q. Do you know that, yourself? A. Yes.

Q. Did you, yourself, shut off any or open any, or try any cocks, or look at any cocks, to see of they were closed, and to see if some were open?

A. I examined the orifice to find out.

Q. How many orifices did you examine?

A. The one into which this apparatus—this plug from
2419 which we took this, came out, and smelled of the gas, and assured myself it was this gas.

Q. You knew the gas was coming out of there?

A. Yes.

Q. But you don't know whether it was coming out in two agitators, or three agitators, or four agitators?

A. The man shut the valves off.

Q. Did you see that?

A. I saw him shut the valves off.

Q. Now, where you were taking this, could you see the electrifier as they call it—the gas machine?

A. I saw the gas machine as I came up to the—

Q. (Interrupting) From where you took this gas, could you see the gas machine?

A. No. I couldn't see the gas machine while I was taking it out.

Q. Do you know that a mere turn of the cock on an intake pipe—the valve of an intake pipe, will control the density of the bleaching medium?

A. Yes, sir.

Q. Did you examine that?
A. Yes, sir.
Q. Was Mitchell with you when you did that?
A. Mitchell was somewhere in the building.
Q. Where was Mitchell when you were taking that gas?
A. I don't remember.
Q. You don't remember? He may have been at the agitator? May he not?
A. He was there on that floor, some place. The agitator was on the floor below. We went down there below and looked first, at the amperage.
Q. What was the amperage? A. Between 4 and 5.
Q. What was the horse-power?
A. It was about 110 volts. 5 amperes. About 500/746ths of horse-power.
Q. That is, at the place where they make the gas?
A. Yes. Making and breaking it.
2420 Q. So that would be about 5/7th of one horse-power?
A. Something like that.
Q. That was used there to make gas?
A. Approximately.
Q. Now, whether that gas went into four agitators, or three agitators, or two agitators, or one agitator, and how the valve was on the intake pipe, you, yourself, don't know, of personal knowledge?
A. We assured ourselves the man closed the valves. We watched him.
Q. Now, did you assure yourselves that somebody didn't go around and change the rigging, and open this valve, and control that gas while you were taking it out? A. Yes.
Q. How did you assure yourselves of that?
A. We watched the whole thing.
Q. Who was doing that? Mitchell helped you watch, to see that the gas came out right?
A. I don't know what Mitchell was doing, but I was watching, and Kizer was watching.
Q. This thing is on another floor, you say?
A. This apparatus, down below? We could tell from the character of the gas that was coming out. We opened the plug, when we shut the valves off, and noticed the character of the gas, and smelled of it, and tasted of it, and noticed the speed of the flow, etc.
Q. Could you taste it?
A. I couldn't taste it very much. It has a sweetish taste.
Q. Sweet? Something that would make the bread sweeter, would you say? A. It is a sweet taste; yes.
Q. Now, could you smell it good?
A. Yes, sir. I could smell it very distinctly.

Q. You could tell the amperage by the smell, and taste, and whether the agitator was shut off, or whether it wasn't?

A. There was no man left down there. We took all the men with us from the machine. We assured ourselves it was running, you understand.

2421 Q. Were you afraid they would change it?

A. We thought it was best to take them along.

Q. So they couldn't monkey around it while you were taking the gas? A. We hardly thought they would.

Q. Now, did Mitchell turn the valve that these men use, so the gas would not be too dilute?

A. Mitchell didn't have anything to do with it, I presume.

Q. What was he out there for? A. I don't know.

Q. He hired you to go out, and took you out, didn't he?

A. I don't know. Mr. Elliott asked me.

Q. He employed you, didn't he? You were in his employ in this matter, weren't you?

A. Mr. Elliott asked me to go out.

Q. Wasn't Mr. Mitchell the man who was directing you?

A. He went out to introduce us to the Rex mill owner, I understood.

Q. And you wanted to see that he didn't make the gas dilute, did you?

A. I was told to get some of that gas under the same conditions the other gentlemen got the gas, and I did so, to the best of my ability.

Redirect Examination

By Mr. Elliott:

Q. I will ask you if, as a matter of fact, in your judgment, you did take the air out of this flask? A. I did.

Q. And do you know if the second miller was in attendance there, the man who testified in this case?

A. There was a miller there in attendance.

Q. Did he say he was present when the Government men were there?

Objected to as hearsay.

Q. Did you ask him to shut off these agitators, so that you could get the gas in the same condition as when it was

2422 gotten by the Government men? A. Yes, sir.

Recross Examination

By Mr. Butler:

Q. Did you start this thing up when you went out there, or was it going when you got there?

A. It wasn't going, but we started it.

Q. How long were you out there?

A. I presume a couple of hours.

Q. How long was it going when you took the gas?
A. We let it run, I think, for about 20 minutes.
Q. So you started this up to make this gas?
A. They weren't running, and we had to start it up to get the gas.
Q. How big is the tank—the mid-way tank.
A. I presume it was about 5 or 6 feet high, by about 14 inches.
Q. How many minutes would it take to fill the tank full of gas, after you started?
A. At the rate of speed that was flowing, it wouldn't be over three or four minutes, because it was flowing at a rapid speed.
Q. You don't think it would dilute it, at all, with the dead air in the tank? You think it would come so strong through there that it would fill the tank full of the gas of the full weight and density of this gas in three or four minutes, do you?
A. Yes. It was an inch and a half pipe.

Redirect Examination

By Mr. Elliott:
Q. Mr. Butler asked you something about breathing the gas.
A. We smelled that, there, and breathed of it, there, during the time we were making the experiment, or gathering it.

Recross Examination

2423 By Mr. Butler:
Q. While it was going into the bottle?
A. Well, before. We opened this inch and half plug, and let it blow out of there for a good while, because it was desirable to get it all out of the apparatus, free of mixtures, before taking that off, so we assured ourselves as to the speed of the flow, and all these things, before we drew this off.
Q. Was it bleaching at the time? A. No, sir.
Q. It wasn't bleaching flour when you took this?
A. It was still, as I say. They were not running when we got there.
Q. I mean, when you took the gas, were they bleaching flour? A. No.
Q. It was running through the agitator empty, was it?
A. It didn't go through the agitator, as I said. We cut the agitators all off.
Q. You shut off all the agitators? A. Yes.
Q. So, you were pumping the full capacity of the machine, right into the bottle? A. No, sir.
Q That is the only place it could escape?
A. It must have been backing against that plug.

Q. It wasn't bleaching flour, at all, and couldn't get into the agitators? How long did you pump it into the bottle?
A. Just a short time. Long enough to fill the bottle.
Q. And how long would that be, in your judgment?
A. It wasn't long.
Q. How long was that bottle connected up with that pipe, in seconds, or minutes?
A. I couldn't say, but I don't think it was over two minutes; probably less.
Q. So, then, you put into that bottle the full capacity of this machine for two minutes?
A. Oh, not the full capacity of the machine. It couldn't have got into that bottle.
Q. Where else could it go?
A. The gas had to get out some place else.
2424 Q. Where did it get out?
A. These plungers, probably around the piston. I don't know where it got out.
Q. What piston? The pump?
A. They had some kind of a pump.
Q. So you think it was [you think it was] going back through the piston of the pump, like a churn? A. Probably.
Q. I understand you shut off all the agitators, carefully?
A. Watched the man who shut them off.
Q. And you saw him do it?
A. Just as it was before.
Q. And you saw him shut off the agitators, didn't you?
A. Well, he shut off the valves that lead to the agitators.
Q. You saw him shut off all the agitators, didn't you?
A. I saw they were shut right.
Q. And the only escape of the gas was by going back over the piston?
A. I would not be sure about that.

By Mr. Elliott:
Q. I just want to ask you about the voltage on that?
A. About 110 voltage, I should judge.

Witness excused.

Thereupon Court adjourned to meet again at 9:30 o'clock a. m., Friday, July 1, 1910.

2425 Morning Session.

Kansas City, Missouri, Friday, July 1, 1910.

Court met pursuant to adjournment and the further hearing of this cause was resumed as follows, to-wit:

Dr. Walter M. Cross, recalled for further examination testified as follows:

The Witness: Before going on, I would like to make a correction of some testimony that I gave yesterday.

The Court: Very well, doctor.

The Witness: And that was in the Rex mill with regard to what I took to be a motor was in fact a generator, and what I took to be a counter-shaft was in fact a shaft that was running through the wall and was running the generator, and while the house current was 110 volts as I say and ascertained the output of this, there was no volt motor on this generator.

By Mr. Butler:

Q. Who told you all this?

A. I ascertained it myself.

Q. When did you find it out? A. This morning.

Q. Oh, you went out.

A. But I wanted to make sure about that.

Q. Did you find this all out by hearsay this morning?

A. No, by personal visit.

2426 Q. Oh, you went out this morning. Do I understand you to say that the gas which is in this bottle which is marked "280" was of the concentration made by that machine and it was flowing through the pipes?

A. If you understand that, that is not correct.

Q. You didn't know that you were taking gas for the purpose of getting it in the same concentration that it ran through the pipes at all, did you?

A. No, sir, I didn't know or I should have been more careful, yes sir.

Q. And you know as a matter of fact that the gas which you put in the bottle was not the same concentration that went through the pipes?

A. Not quite the same concentration.

Q. You supposed they just wanted some gas for experimental purposes?

A. I was not informed at the time it was to be made for a comparison, Mr. Butler.

Q. You was not informed at all that it was for the purpose of showing the concentration of the gas?

A. No, sir, I didn't know at that time.

Q. And didn't take any pains at all to have the same concentration, did you? A. Not on that experiment, sir.

Cross-Examination

By Judge Scarritt:

Q. Now since you found out what was required have you taken a sample of the gas with the view of ascertaining whether it has any color or not?

Mr. Butler: We object to that.

The Court: Well, he may answer.

A. I have.

Q. Have you that gas with you? A. Yes, sir.

2427 Q. Let me see it. Now since you ascertained, I understand at the time you took this gas you didn't know it was to be used for the purpose of attempting to show the color of the gas?

A. Not for comparison, I didn't know it or I should have been more careful, sir.

Q. You didn't know that at that time? A. No, sir.

Q. Dr. Keyser who was with you did, didn't he?

Mr. Butler: I object to what Dr. Keyser knew.

The Court: Yes.

Judge Scarritt: I withdraw it.

Mr. Butler: I object to this kind of examination—a mere play—

The Court: Now, gentlemen, of course, I recollect distinctly and well what occurred yesterday morning, and it was agreed by counsel, with my approval, that Dr. Cross should be called with reference to one exhibit.

Judge Scarritt: Yes.

The Court: Now let's confine ourselves to that.

Judge Scarritt: We made a mistake in the exhibit, that is all.

Mr. Butler: But this exhibit was prepared since he was on yesterday; how can they be mistaken in the exhibit, and the exhibit that they produced yesterday he had in his possession.

The Court: Now we must confine ourselves to this one exhibit, otherwise there will be no end to this case.

Judge Scarritt: Let see—

The Court: Because—just a moment, Judge Scarritt, if we are going back into these mill propositions, you will have to send for men, and they will have the privilege accorded them.

Judge Scarritt: We are perfectly willing to let the jury go and see it themselves.

2428 The Court: Judge Scarritt, no use of saying as has frequently been said, for the jury to go and see it for most obvious reasons to me as a lawyer, for the reason that it can not be made of record; there is no statutory authority therefor either federal or state that I know anything about.

There is nothing for the jury to see if they go there other than what has been described here twenty-five or fifty times, and it will not do for you to say that I am keeping out any evidence, or anything that would enlighten the jury; it would not enlighten the jury, and it could not be made of record if I did allow them to go.

Judge Scarritt: We object and except to the remarks of the court.

Judge Scarritt: Now, if your Honor please, we offer to substitute the bottle of gas which I now hold in my hand, and which I will have marked as an exhibit (which was accordingly marked "Exhibit 281") for the exhibit 280 which was introduced yesterday, for the reason that the latter exhibit has been taken by the witness with the view of obtaining a complete sample of the gas with a complete vacuum made in the bottle by draining it at least 200 times.

The Court: The Court on its own motion by reason of what has heretofore occurred and by reason of what occurred yesterday morning before the jury and reporter were in attendance, which will be made of record later on if it should become necessary or desirable, the exhibit is excluded.

Judge Scarritt: I would like further to say, if your Honor please, that the exhibit No. 280 which we offered yesterday was made by mistake and it was intended to offer the Exhibit 281, or have and offer the 281.

2429 The Court: The court knows, if that is a motion, it ought to have been corrected heretofore, and by reason of what I have heretofore already said, the court of its own motion excludes it. There will be a record accordingly made if it should become desirable or necessary.

Judge Scarritt: Yes, sir. In order to identify this Exhibit 281 I would like to have the witness state how he obtained it.

The Court: Now anything further with this witness?

Judge Scarritt: I make that offer.

The Court: You are excused, Dr. Cross. Call a witness for defendant.

Counsel for claimant except to the ruling and remarks of the court.

Dr. E. R. Lecount, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

By the Court:

Q. Where do you reside? A. Chicago.

Q. E. R. Lecount, Chicago, Illinois.

By Mr. Elliott:

Q. What position do you occupy, Dr. Lecount?

A. I am professor of pathology in Rush Medical College.

Q. With what hospitals, if any, are you connected?

A. I am connected with the Presbyterian Hospital of Chicago, the St. Luke's Hospital, Chicago, the Cook County Hospital of the same place, as pathologist to all of these institutions.

Q. Where did you obtain your medical degree?

A. At Rush Medical College.

2430 Q. Have you pursued post graduate studies and if so where?

A. I have in both this country and in Europe. In this country at John Hopkins Hospital; in Europe in the Pasteur Institute in France, and in the University of Berlin, Germany.

Q. Prof. Haines testified yesterday to having turned over to you the organs of some animals for examination. Do you recall that fact? A. Yes, sir.

Q. What animals were they, Dr. Lecount?

A. They were six guinea pigs and six white rats, half of each group being used or were used as controlled animals and half for experimental tests animals so-called.

Q. What did you examine these animals for?

Mr. Butler: I object to that as irrelevant and immaterial to any issue on trial in this lawsuit.

The Court: He may answer.

A. I first examined those animals for any evidence of a methemoglobinemia.

Q. What did you do?

A. I examined the spleens for the presence of pigment which results from the destruction of the blood when methemoglobinemia is present.

Q. What is methemoglobinemia?

A. It is the occurance of a change of the hemoglobin, and its oxygen carrying power, as I understand it when hemoglobin that is present in the red corpuscles of the blood whereby its oxygen carrying power is limited. The chemistry of the process I do not understand.

Q. What did you find as a result of your examination?

Mr. Butler: Object to as irrelevant and immaterial.

The Court: He may answer.

A. I found no evidence of a destruction of the blood.

The Court: He asked what you did find not what you didn't.

A. I will so answer. I found the spleens of the guinea pigs were used as test animals were practically the same
2431 or absolutely the same so far as I could distinguish.

Mr. Butler: I move to strike out the answer as not responsive and immaterial and irrelevant.

The Court: That answer is stricken out. The question is what you found.

Mr. Elliott: I withdraw the question.

Q. I will ask you as a result of your examination if you found methomoglobinemia in the spleens of these animals?
A. I found no evidences of any chronic poisoning.

Mr. Butler: I move to strike out the answer as not responsive to the question.

The Court: The motion is sustained.

To which ruling of the court claimant then and there duly excepted.

Q. Did you find in the spleens of these animals any evidences of chronic methemoglobinemia? A. I did not.
Q. Why did you examine the spleen Dr. Lecount?

Objected to as immaterial and irrelevant.

The Court: He may answer.

A. Because in any long standing destruction of the blood there is a pigment deposited in the spleen in considerable amounts.
Q. Is that in your judgment a test for determining this fact you testify to? A. It is.
Q. What relation in this connection has the spleen of these animals to the spleen of a human being?

Objected to as irrelevant and immaterial.

The Court: He may answer.

A. All these processes are the same in all warm blooded animals.

By Judge Scarritt:
Q. How is that?

A. These processes are the same in all warm blooded animals.

Mr. Butler: I understood the question not to ask about processes but the function of the spleen as compared with a human being.

(Question and answer read by the reporter).

2432 The Court: Well, it may stand. Go on.

By Mr. Elliott:

Q. In all your experience have you ever had any observation or heard or read of it, a case of a human being having chronic nitrite poisoning?

Counsel for libelant objects to the question as irrelevant and immaterial.

The Court: Chronic.

Mr. Elliott: Chronic nitrite poisoning..

The Court: Well, he may answer.

A. I have not.

Q. How many human spleens have you examined in the last six years?

Objected to as irrelevant and immaterial, and no foundation laid.

The Court: He may answer.

A. Approximately a thousand.

Q. Where? A. In Chicago.

Q. How many in your entire professional experience?

A. Several thousand.

Q. With what result as to chronic methemoglobinemia?

Objected to as immaterial and irrelevant.

A. I don't know of any.

The Court: You may answer.

A. I don't know of any chronic methemoglobinemia that occurs in an adult in the human.

By Judge Scarritt:

Q. What is that?

A. I do not know of any chronic methemoglobinemia that occurs in the human.

Judge Scarritt: Did you ever find it?

The Court: I thought—what did you say about an adult?

A. Most of my work—

By the Court:

Q. I understood you to say something about an adult, was I mistaken?

(Answer read by the reporter).

2433 A. Yes, or in any human adult or infant, your Honor.

By the Court:

Q. Well, I simply asked you what you said. A. Yes.

By Mr. Elliott:

Q. Well, my question had reference to the fact if you ever in all these post mortem examinations seen a case of chronic methemoglobinemia, that was the question. A. I have not.

The Court: Let me ask you, could there be such a thing as chronic methemoglobinemia.

Judge Scarritt: I call your attention to the fact that it is based on the testimony of the Government's witness who said that.

The Court: I have to deny myself this great pleasure again of listening to argument. I am simply asking him whether there be such a thing as chronic methemoglobinemia.

Mr. Butler: You don't understand this at all.

Judge Scarritt: I understand I don't understand it at all.

The Court: Well, go on, I am not a scientist and I could not conceive of such a thing, but may be I am mistaken.

Witness: It is conceivable, your Honor.

By the Court:

Q. Conceivable—does it occur? A. Not to my knowledge.

Mr. Elliott: That is all.

The Court: So you as a scientist and I as a layman agree then.

Cross-Examination

By Mr. Butler:

Q. Have you ever seen methemoglobinemia in a human being or an animal in your life? A. How?

2434 Q. How is that? A. How?

Q. With your eyes, I suppose, you would use your spectroscope?

A. I have seen it with the spectroscope, yes, sir.

Q. In a human being? A. In the blood.

Q. In the human living being.

Judge Scarritt: You mean chronis or acute?

Mr. Butler: I will tell him what I mean before I get through with him.

A. I do not recall how, just that it was from a human being.
Q. What was from a human being? A. The blood.
Q. A living human being? A. Yes, sir.
Q. What? A. Yes, sir.
Q. When? A. Within the last three years perhaps.
Q. Where? A. At Rush Medical College.
Q. What gave it to him?
A. It was a case of chronic acetanilid poisoning.
Q. Is that methemoglobinemia?
A. It was a case of acetanilid poisoning.
Q. I know what you said, it was a case of poisoning by acetanilid. Is that the same methemoglobin as is produced in blood by nitrites? A. I suppose it is.
Q. Is there any difference between the change of the blood by carbon monoxid acetanilid and nitrites?
A. Not to my knowledge.
Q. You think it is all the same you think if you are asphyxiated by gas it is the same as if the blood was robbed by nitrites in your food, do you? A. No, I do not.
Q. Do they have the same effect asphyxiation by gas, which is the carbon monoxid hemoglobin, is that the same as the methemoglobin of the nitrites or the acetanilid or is it different?
A. The methemoglobin that occurs in the blood from different methemoglobin poisons, I believe is the same in all instances as far as I know.
Q. The nitrite hemoglobin, carbon monoxid methemo-
2435 globin and the acetanilid methemoglobin?
[—] I couldn't say.
Q. Will you say that they are the same or different or that you don't know?
A. That is my impression but I am not a chemist.
Q. That requires chemistry, does it? A. It does.
Q. Did you ever find any chronic methemoglobinemia in the spleen of anything, animal, man?
A. I have never seen in the spleen of animal or man the results of the chronic methemoglobinemia.
Q. And why do you expect to find it in the rats; did you examine the rats?
A. I examined the rats with no expectation of one thing or another.
Q. Why did you examine them you knew in all your experience as a man you knew that that could not be, didn't you; you knew it was physically impossible to find any methe-

moglobinemia as a chronic methemoglobinemia in the spleen of the rat or guinea pig or anything like that? A. No, sir.

Q. You thought that it was possible by nitrites?

A. I did not speculate as to the possibility or impossibility, no, sir.

Q. And you examined a thousand spleens of human beings to see if there was any chronic methemoglobinemia from nitrites? A. Never, no, sir.

Q. You did not examine for chronic methemoglobinemia at all, did you?

A. I have examined the spleens of thousands of human beings.

Q. For chronic methemoglobinemia?

A. For extensive pigment deposits as well as for other changes.

Mr. Butler: I move to strike that out.

The Court: It will be stricken out as not responsive.

Q. Not talking about pigment deposits; I am talking about chronic methemoglobinemia coming from nitrites, how many spleens of human beings have you examined for that thing?

A. Why I have examined thousands of spleens for that, results of that condition, yes.

2436 Q. Never found any?

A. Never found any indication.

Q. Never heard of anyone that did?

A. Not of the chronic methemoglobinemia, no, sir.

Q. So in all your reading and learning and experience in life you never found or heard of chronic methemoglobinemia in the spleen or evidence in the spleen, did you? A. No, sir.

Q. Did you ever examine the hair for it? A. No, sir.

Q. Or the whiskers? A. No, sir.

Q. Never heard of anybody finding it in the hair or whiskers, did you? A. No, sir.

Q. And yet never having heard of it being found in the spleen, never having heard of it being found in the whiskers, you examined the spleen and did not the whiskers?

A. That is it.

Q. That is strictly scientific, I suppose?

A. No I don't think it is.

Q. Did you use the spectroscope? A. No, sir.

By the Court:

Q. Sir? A. No, sir.

Q. Did you use a miscoscope? A. Yes, sir.

Q. Used it carefully on the guinea pigs?

A. Yes, sir.

Q. Looking for this thing that you never heard to be in the spleen of anything. Did you know that this experimentation was for the purpose of proof in this case to show that it was a good thing to eat flour with nitrites in it, because the guinea pigs didn't have methemoglobinemia in the spleen when no guinea pig ever had it, or no human being ever had it?

A. What is the question?

Q. Did you know that the examination of these spleens in the rats and the guinea pigs was for the purpose of proof in this case that it was a good thing to put nitrites in flour?

A. No, I didn't have that definite purpose in mind in examining these spleens.

The Court: Doctor, you will fall if you don't look out.

A. Thank you. I examined these spleens for evidence
2437 of blood destruction.

Q. Well, you knew these experiments were being made under somebody's direction for the purpose of proof in this law suit or some bleach-flour law suit?

A. Yes, sir, yes, sir, I knew that.

Q. So that and you knew it was claimed by the men who bleached the flour that it was a good thing to put nitrites in the flour you knew what was the claim?

A. I knew that there was an issue over the bleaching of flour, that is as far as I knew about it.

Q. The presence of nitrites in the flour resulting from bleaching, that is what you knew?

A. I knew that the question of nitrites was an issue, yes, sir.

Q. Now, then so as furnishing light on that question you took three spleens of three rats and three spleens of three guinea pigs and examined them under the misroscope for something that you had never heard in all your life or experience as having occurred in the spleen of any guinea pig or rat or other animal.

A. No, I didn't understand it that way, Mr. Butler.

Q. Did you ever find chronic methemoglobinemia in the spleen of any guinea pig or rat or human being or hear of it there resulting from nitrites?

A. The question, as I stated before, is a little difficult to answer, I would like to state—

The Court: I can't help it.

A. I would like to state why.

Q. Did you ever find or hear of methemoglobinemia in the spleen of a guinea pig resulting from nitrites?

A. Can you ask the question the results of methemoglobinemia?

A. No. I ask if you ever found chronic methemoglobinemia or the evidence of it or the results of it in the guinea pig from nitrites? A. No, sir.

Q. In the rat? A. No, sir.

Q. In a human being? A. No, sir.

Q. In any animal? A. No, sir.

2438 Q. Did you ever hear of anybody who had?

A. Not of the chronic condition.

A. No, sir. Did you ever hear of anybody who ever claimed that chronic nitrite poisoning would manifest itself in the spleens of anything that has a spleen? A. Yes, sir.

Q. When?

A. Oh, there is plenty of evidence for that.

Q. Chronic nitrite methemoglobinemia in the spleen, haven't you just told me that there was not, never heard of any such thing? A. The evidence—

Q. I say nitrites, I am talking about nitrites?

A. Yes, sir.

Judge Scarritt: Didn't say that before.

A. There is plenty of evidence, it is a well known fact that when the blood is destroyed the pigment is deposited in the spleen, no matter what the reason for the blood destruction is.

Q. Let me see, then I have misunderstood you all along?

A. Yes.

Q. Then chronic poisoning by nitrites does show evidence in the spleen? A. It should.

Q. It does, does it; did you ever see a case?

A. No, sir, not from chronic nitrite poisoning.

Q. Did you ever hear of a case? A. No, sir.

Q. No, did you ever in a human being or an animal?

A. Not in the chronic condition.

Q. That is it, isn't it?

A. Not in a chronic condition.

Q. That is what I say, in a chronic condition, so that never having heard of it, never having seen it, in order to determine whether or not nitrites are good in bread, you took three rats, the spleens of three rats and the spleens of three guinea pigs and examined for something you never found anywhere in the world or heard of having been found?

A. I examined for other evidences of blood destruction.

2439 Q. No, you examined it for chronic nitrite hemoglobinemia poisoning or the evidences of it, didn't you?

A. Yes, sir.

Q. Now, then is the blood of a rat the same as that of a man? A. It is in these respects.

Q. Is it the same or different, as a scientist, if there was blood on a hammer, and the question as whether the hammer

had hit the man on the head and killed him and if that was the man's blood, or whether it hit a rat and killed it, could you as a scientist find out by analyzing the blood?

A. There are certain measurements.

By the Court:

Q. The question is, can you tell the difference between the blood of a rat and a human being.

Q. I am not asking him the details, can you tell the difference, are they the same or are they different?

A. They are not alike in some respects, in other respects they are.

Q. You can distinguish human blood from the blood of any other living thing, can't you?

A. A young dog is very similar to a human being in some respects.

Q. Can't you distinguish between the human blood and the blood of any other living thing?

A. I don't know of anything that approaches a similarity as well as a young dog, a puppy.

Q. Now, with respect to the law, Dr. Haines told us when you are taking things all the time and all the time then the thing ceased to be harmful. Now I want to find out the life of the [rate] examined they live on the offal and sewers, do they not, and in the filthy places and are the scavengers, are scavengers, are they not? A. I believe so.

Q. You know they are, don't you, rats?

A. Oh, I have the general impression that we all have about rats.

Q. You don't think their method of life, or their food, or their diet, or their air, or their blood is in any way com-
2440 parable to that of a human being? A. Oh, yes, I do.

Q. So then after looking at the spleen of a rat, and found that it was not poisoned by nitrites when you was giving nitrite of sodium, that that will justify putting nitrites in bread?

Counsel for claimant objected to the question as calling for an improper conclusion.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Yes, I answer that.

Q. All right, so that to get your position as a pathologist and scientist, doctor, if you give a rat some nitrites, then give it some more and keep on for a long time, then you examine his spleen and you find that he was suffering from chronic nitrite

methemoglobinemia, then you say that it is right to put nitrites in bread?

Same objection.

Q. From that experiment alone, do you, that is true, isn't it, is it?

A. No, providing certain other conditions were fulfilled, yes.

Q. That is that proof, the examining of the spleen for chronic methemoglobinemia by nitrites in the rat, you never having found it there, nobody else ever having found it there, is good proof why we should put nitrites in baby food?

Same objection.

The Court: He may answer.

Q. What? A. If the conditions were the same, yes, sir.

Q. If the baby was a rat, is that what you mean, if conditions be the same? A. If you wish it so, yes.

Q. Now the baby is not, we will not make that assumption, we just take the baby in the ordinary life, does the experiment which you made on the spleen of these rats have any tendency whatever to justify the proposition that it is right to put nitrites in baby food?

2441 Same objection.

A. In what amount?

The Court: He may answer.

Q. In any amount? A. Yes.

Q. Yes, so that as a scientist you say if you don't find the thing that never existed anywhere, anything anywhere, that is the evidence of chronic nitric methemoglobinemia in the spleen in the rat, that then having tried it that way on the rats, you are willing to put the nitrites in my baby food or your baby's food?

A. If there was anything to be accomplished by it, yes, sir.

Q. What do you mean if there was anything to be accomplished by it, to sell flour?

A. If there was any necessity for doing it.

Q. You think if it made it easier to sell flour, that would be a sufficient reason?

A. I am not saying what the reason should be.

Q. If you wanted the nitrites in the baby food for medicine, is that what you mean?

A. If there was any reason for putting in the small amounts I would not consider it as harmful.

Q. Because of this experiment? A. Yes, sir.

Q. Under this experiment?

A. These experiments and facts that I know.

Q. No, I am speaking of these experiments that you made to justify it? A. Yes, sir, these experiments.

Q. All right, all right, I see you are a scientist all right. Are you able to distinguish between the human blood absolutely from the blood of other animals?

A. It is possible to distinguish human red corpuscles from the red corpuscles of most other animals.

Q. How? A. By measurements.

Q. Made by measurements. Give us the detail of that. Here I have a spatter of dog's blood there, and of human blood over here. Now I want to measure, how am I going to do it?

A. Measurements are made with a scale used underneath a microscope.

2442 Q. What is the method of measurements; I would not know how to go about it.

A. You use the microscope and you have a little scale put underneath the microscope.

Q. Then what?

A. And the red corpuscles are put over this particular scale and as the diameter is measured the red corpuscles are observed.

Q. Well, then we measure the diameters and then?

A. There are differences in the size.

By the Court:

Q. Sir? A. There are differences in the sizes.

Q. I know, what differences and which way?

A. Well, the human red corpuscles has a definite known diameter.

Q. What is it?

A. It is about 7 plus myria-millimeters, thousandths of a millimeter.

Q. What is it of a young dog?

A. A young dog is very nearly the same.

Q. What is it?

A. I could not answer offhand; these things are laid down in tables that are referred to, they are well known and generally accepted measurements.

Q. Is that the only way of finding out, taking a microscope and a rule? A. No, there are other methods.

Q. What other methods?

A. They are methods that depend upon the use of laboratory animals.

Q. Well, I know, but give us the test; isn't there some test?

A. The test is to inject a laboratory animal with human blood.

Q. Yes.
A. And in the laboratory animal there is an indicator for the presence of human blood.
Q. What is an indicator?
A. An indicator is known as an anti-body we don't know what it is.
Q. Then what?

By the Court:
Q. You don't know?
A. We know what it is, we know that there is a reaction perhaps.

Q. What kind of a reaction? A. A precipitate.
2443 Q. Makes the blood solid?
A. No, sir, a precipitate.
Q. Well, if you introduce the human blood into the blood of a lower animal, what effect has it, does it make him feel better or feel worse?
A. Human blood into the body of a lower animal?
Q. Yes.
A. It will have a tendency of dissolve the blood of the lower animal.
Q. Dissolve it? A. Yes, sir.
Q. Well, then the constituents must be somewhat different?
A. They are.
Q. Well, it is something different than the mere atom of the red corpuscle, then, isn't it? A. Yes, sir.
Q. Different kind of blood? A. Yes, sir.
Q. Let me see about this, we call this a red corpuscle of a human being, is a little bit larger (illustrating on blackboard) and that of a dog, very roughly. Now that is not the only difference, is it, because when you put the blood of a human being into the dog's veins that makes him sick, doesn't it?
A. Well, it would produce certain symptoms.
Q. What symptoms would it produce?
A. Well, there is a solution to some extent of the red corpuscles of the injected animal.
Q. There is a solution of the red corpuscles, so then the human blood dissolves the red corpuscles of the blood of the lower animals, will in the blood stream of the lower animals?
A. In the lower animals there is some so-called solution of the blood.
Q. Now, if you put the blood of a lower animal into the blood of a human being is that blood strong enough to withstand the attack of the lower animal?
A. Yes, there is some change.

Q. Then it is demonstrated without going into the details that the bloods are chemically different?

A. These differences are in the fluid parts of the blood largely.

Q. Well, it is demonstrated that the blood, speaking of it as a single fluid, the fluids are different?

A. In some respects, yes, sir.

2444 Q. Chemically how much human being blood would it take if injected into the circulation of a dog to kill a dog?

A. I don't know.

Q. About how much, will any quantity kill him, make him so that he will die? A. It is my impression, yes, sir.

Q. How much? A. I couldn't say.

Q. A spoonful? A. Oh, no, more than that.

Q. It would take more than that? A. Yes, sir.

Q. How much would it take to kill a guinea pig?

A. Human blood injected how?

Q. I don't care how, in any way, the best way to kill him?

A. The best way to kill him would be to put it in the veins or arteries of the blood of this animal.

Q. Now how much of the human blood will it take to kill the guinea pig?

A. I couldn't say, perhaps two or three ounces.

Q. Two or three ounces, now doctor—

A. Approximately, guess work on my part.

Q. Is methemoglobin in blood a bad thing or a good thing?

A. A bad thing.

Q. Will nitrites produce it?

A. To the best of my belief I know it will.

Q. You are sure of it? A. Yes, sir.

Q. That is one of the certain definite well known facts of science isn't it? A. Yes, sir.

Q. The action is chemical, isn't it, without going into the detailed reaction, but the action is a chemical action, isn't it?

A. It is my impression that that is the belief.

Q. Now then you have studied chemistry to some extent?

A. Yes, sir.

Q. While you are not familiar, you know that chemical laws act with certainty and exactness under the same conditions? A. That is my general impression.

Q. What is that? A. That is my general impression.

Q. You know that, don't you?

A. I don't wish to qualify, Mr. Butler, as a chemist.

2445 Q. No, I understand, but you know that the laws of chemistry are as certain as the law of gravity, don't you?

A. So far as they are understood.

Q. And you know, do you not, that nitrites added to food will produce methemoglobin in the blood?

A. In certain amounts.

Q. Yes, sir, and you know that nitrites—do you know the kind of nitrites in this bread from bleached flour?

A. No, sir.

Q. You don't know about that, but speaking of nitrites generally, it will do it, all nitrites will do it?

A. Nitrite poisoning is said to be associated with methemoglobinemia. That is an answer to your question, is it not.

Q. No, no, I am speaking of poisoning the people.

A. Any degree of poisoning.

Q. Yes, sir, and there is poinsoning whenever methemoglobin takes place?

A. That would be a harmful effect, yes, sir.

Q. And if it only takes place to the effect of the amount of one single molecule of nitrite in the blood, it is harmful to that extent? A. If you could so conceive of it.

Q. Yes, sir, yes, sir, and the degree of harmfulness bears upon the amount produced, does it not?

A. I don't think I can answer yes to that statement.

Q. Well, I say if you produce a little methemoglobin, and change it from hemoglobin to methemoglobin by nitrites in food? A. Yes.

Q. The injury would be less than if you produce more, is what I am getting at?

A. Unless you wish to invade tolerants in the formula.

Q. Well, I know.

By the Court:

Q. What? A. Tolerants.

By Mr. Butler:

Q. But now leaving out of consideration the question of tolerants for the purposes of this answer, I will take that up later if you desire it, now independent of getting the
2446 nitrite habit, so to speak, which would cover roughly your tolerants, now say that if we take enough nitrite in our bread to produce a little methemoglobin, there would be slight injury; if we increase the nitrites in our bread and produce more methemoglobin, there will be more injury?

A. Yes, sir.

Q. And the amount of injury produced will be in a way, or at least respect the blood, as respects the methemoglobin, I will put it, the oxygen carrying power of the blood being measured by the amount of methemoglobin produced?

A. To some extent, yes, sir, not altogether, perhaps.

Q. Well, if you produce one per cent methemoglobin, that is half as bad as two, two-thirds as bad as three, and so on, roughly speaking?

A. Roughly speaking, the greater the methemoglobin the greater the harm.

Q. The oxygen carrying power of blood is the most important function of the blood, is it not?

A. I think it would be so.

Q. Now, these nitrites also produce blood pressure, do they not? A. Yes, sir.

Q. And that depends upon the amount, does it not?

A. Yes, sir.

Q. And frequently of the dose? A. Yes, sir.

Q. Reduction of blood is a bad thing for health, isn't it?

A. No,—

Q. What is that? A. No, I would not—

Q. Standing alone it might be a good thing in sickness; angina pectoris you have to give nitrite to keep them from dying from that?

A. Under certain conditions it is very desirable to reduce blood pressure.

Q. I mean taking a person in health, in normal health, the plugging in of nitrites with the food and depressing blood pressure constantly, would tend, I will put it, would be unfavorable to health?

A. If the nitrites were in quantities sufficient, it would do that, yes, sir.

2447 Q. I am speaking now of enough to appreciably depress blood pressure? A. Yes, sir.

Q. And further nitrites invade—attend the irritation of the digestive tract, do they not? A. I do not know.

Q. Well, isn't it—do you practice medicine?

A. No, sir.

Q. Has it come under your observation that giving—take a case of angina pectoris, or something like that, I understand that they have to give nitrites to keep them from suffering; is that within your knowledge? A. Yes, sir.

Q. And do you not kind a gastric disturbance resulting from the nitrites being fed into the patient all the time?

A. No, I don't know that, Mr. Butler.

Q. But you do find a cyanosis, do you not, if it is carried on far enough? A. Yes, sir.

Q. Now, we will take for example, a patient with a heart that is very painful at times, his heart disease is called angina pectoris, I don't know what the phrase means, do you, Doctor; tell us just what that means in English, can you; pectoria means of or relating to the heart, I suppose, now, what does angina mean—pain?

A. Pain, a suffocation.

Q. Pain suffocation at the heart?

A. Feeling of suffocation.

Q. Now to remove that nitrites are given? A. Yes, sir.

Q. And also they have to administer several times a day in appropriate doses? A. Yes, sir.

Q. And that relieves the blood pressure and the suffering, doesn't it, tends to?

A. Yes, sir, is supposed to act in that way.

Q. Now, after you treated a patient that way for a while, you will find cyanosis, won't you? A. I don't know that.

Q. Don't know that it will keep changing the blood, and so on, and the patient will take on the appearance of the person that has been partially asphyxiated by gas?

A. No, I have no knowledge of cyanosis being produced
2448 by medicinal doses or nitrites administered for the purpose as you have described, I haven't any knowledge of it.

Q. Have you any knowledge to the contrary? A. No, sir.

Q. Very good, then you don't know about it, and do you not know of reported cases? A. No, sir.

Q. Of that very thing?

A. Not through the therapeutic administration of nitrites as you have described to me.

Q. Now, Doctor, I am not quite satisfied that you want your testimony to stand as it is left, I cannot believe that you want it to stand as I understood it with reference to the significance of this rat experiment? A. Would you like me to explain it?

Q. I will ask you this, I want you to make it clear?

A. Yes, sir.

Q. And in a certain respect, now, the rub in this case is whether it is a good thing to put nitrites in flour to make bread out of it, that is the issue we are trying here. Now, in order to shed light upon that issue you did a certain detail of work, to-wit, you examined the spleens of three animals, three rats, three animals?

A. And three guinea pigs.

Q. And you looked there for chronic nitrite methemoglobinemia? A. For the results of such a condition.

Q. For the evidence of it?

A. Pigment deposits, yes, sir.

Q. And you found none? A. I found none.

Q. Now, we'll say that your methods were good, and there none there, for the purpose of my point.

A. Any that would indicate blood destruction as a diseased condition.

Q. All right, we'll assume that that is true. A. Yes.

Q. Now, then, as to the effect of that experiment. Now, you told us that you never heard of any such thing existing in man or animal?

A. The laws are very well understood, generally known, if you wish my position clearly I can give it to you.

Q. But you told us that you never heard of any such thing in man or animal?

A. I did not make the statement in the way in which you represented it.

2449 Q. Very well. Did you ever hear of chronic nitrite poisoning in man or animal?

A. No, I don't know of such a condition existing.

Q. Very good. Now then, was it not, as I understood Mr. Elliott, the sole purpose of asking you there to show that the spleens of these pigs and rats did not show any chronic nitrite poisoning? A. That is correct.

Q. Now, it is your position that there never was any chronic nitrate poisoning of man or beast?

A. I do not know of any evidence that I have ever seen or heard of that condition.

Q. Very good. Let us assume that that is true. Then will you say that that experiment justifies the putting of nitrites in food for babies?

Counsel for claimant objected to the question as calling for an improper conclusion of the witness.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. Now, that is the point, it is the inference; it is not your work, or anything, but the inference. I want you now, because I don't think you want to leave the jury with the impression that you think that the examination of those spleens, that is, these spleens of lower animals,tends in any degree to justify the putting of nitrites in food; now, do you think so, that alone, now?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. What is the reason for putting nitrites in food?

Q. To sell the food, I think, and to cheat people who buy it, that is what I think.

Judge Scarritt: We object to that and ask to have it stricken out.

Mr. Butler: All right, strike it out.

The Court: That will be stricken out.

By Mr. Butler:

Q. But that is what I think.

A. If that is the only reason I would not think that my work would be an argument for the putting of nitrites in food.

Q. No, none at all, none whatever? A. No, sir.

Q. Nor it would not be any evidence that nitrites might not injure health; you don't have to have chronic poisoning in order to injure health, do you? A. No, you can have acute poisoning.

Q. And you can injure health without having poisoning at all, can't you, by foods, I mean by adulterated foods?

A. By perfect health of the individual—

Q. No, no, don't let's get off on any definition, I mean now as people speak of taking— A. Yes.

Q. Poisons, of taking poison. A. I understand.

Q. Now, foods can be injurious without poisoning people, can't they, unfavorable to well being?

A. Generally speaking, no.

Mr. Butler:

Q. They have to be poisoned before they are bad?

A. They have to be.

Q. Now, then,—well, I guess that is all. Do you justify the adding of nitrites to food?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. To food, to food, to flour? A. For what purpose?

Q. Does that make a difference?

A. Yes, sir, it would make a difference in my answer.

Q. Well, we'll say to bleach it and make it look better, let me get two samples of flour here, to change the color so slightly that you cannot observe the change, we'll say that is the reason, unless you get two samples side by side?

2451 A. Well, I have no particular opinion about the bleaching of flour, the addition of nitrites, Mr. Butler, I don't believe that these substances in amounts that are so minute, that we have no reason to believe that they have any harmful action, there would be no objection to adding them to foods.

Q. Suppose you add a little to every food, how would that be?

Counsel for claimant objected to the question as not having anything to do with this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. If the amounts were very minute I should not hesitate to eat the food myself, or give it to my baby.

Q. All right. Well, now, suppose that in a test diet, for breakfast you get fifteen foods, all poisonous in substance, each one is within the safety limit?

Counsel for claimant objected to that for the same reason.

The Court overruled the objection; to which ruling of the court claimant then and there duly excepted.

Q. And at dinner you get seventeen? A. Yes, sir.

Q. Each one within the safety limit, and at supper you get twenty-two, that is fifty-five in a day, three hundred and eighty-five in a week, sixteen hundred and fifty in a month, twenty thousand seventy-five in a year, one million four hundred and five thousand two hundred and fifty if we live to be three score and ten, of poisonous substances put into our food for the purpose of making the food look better, each poisonous substance as of itself just within the safety limit as to amount?

Same objection by claimant.

A. Yes, sir.

Q. Would that be a good thing or a bad thing?

2452 Judge Scarritt: I object to that as incompetent, irrelevant and immaterial and having nothing to do with the issues in this case and bringing in foreign matters and foreign issues in the case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. Your Honor, I would answer it as a layman very largely, of course.

Q. Can't you answer it as a pathologist?

A. As a pathologist, yes.

Q. What is it?

A. I should say that would be a very bad way to do.

Q. Well, now, Doctor, do you and I not agree that the extent of the badness of it depends upon the extent of the poisoning added, the poison substance added?

A. You would have to draw the line there somewhere between amounts, just within the safety limit, as you have stated them,

and the amounts which made the notion that there would be any possibility of their doing any harm.

Q. Do you think it all right to permit the dairyman who milks the cow to put in a little formaldehyde, the dealer who ships it, put in a little formaldehyde, the hotel man who gets it, put in a little formaldehyde, and each depending upon his own judgment as to how much will make his milk keep better, or sell better or taste better?

Counsel for claimant objected as not within the issues of this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I don't believe in formaldehyde in milk, generally speaking.

Q. You believe in sulphate of lead in coffee? A. No, sir.

Q. You think it is injurious, don't you?

Counsel for claimant objected to the question.

The court overruled the objection; to which ruling claim-
2453 ant then and there duly excepted.

A. Yes, I think lead is a bad poison, generally speaking.

Q. You think nitrite is a bad poison,—well, you think that nitrites is a very bad poison too, don't you, qualitativery as Dr. Haines put it?

A. Well, I cannot testify as Dr. Haines did; I am not a toxicologist.

Q. Well, but your understanding is that the nitrite group is poisonous?

A. Yes, sir, my understanding is that nitrites are poisonous within poisonous doses.

Q. And your understanding further is that nothing is poisonous unless it is within a poisonous dose?

A. Poison, of course, would refer to the harmful action, yes, sir.

Q. It means quantity, that is right? A. Yes, sir.

Q. There is no poison unless there be enough to do some harm; that is your idea about it?

A. I would include that notion of action, of course.

By the Court:

Q. Sir?

A. I would include the notion of results of the substance upon the individual.

By Mr. Butler:

Q. Now, suppose that the amount of nitrites in one quantity of bread for one breakfast, or food made from flour which is several, what would you think that if in a day you would have fifteen or twenty doses of nitrites?

A. How much a dose?

Q. Well, we'll say, the first one, we'll say that each one is about one-tenth of the safety limit?

Same objection by counsel for claimant.

Q. One-tenth of the limit of safety, one-tenth of the limit of safety.

The court overruled the objection, to which ruling of the court then there duly excepted.

A. And how many doses?

Q. About fifteen.

A. Distributed over what time?

2454 Q. A day?

A. I would not hesitate to take them if there was any object to be accomplished by taking them.

Q. I know, but we'll say you don't want them for medicine?

A. I would not take them.

Q. And there being no object to be accomplished, no object in the interest of health to be accomplished, you would not add any to food, to the bread?

A. I would not add any poison to food if there was no object for doing it.

Q. Let's be perfectly fair Doctor, about this.

A. Yes, sir.

Q. Now, of course, the object is to—part of the object is, the seller might have an object to save money, you see?

A. Yes, sir.

Q. The pathologist or medical man might have an object as to matters of health, do you see; now, then, there being no object as respects health, at all, not at all, nor of the quality of foods, not at all, then do you not think it wrong purely from the standpoint of health to add nitrite poisons to the food of all the people, young and old, and great and small, and sick and well, under all circumstances so they cannot escape taking nitrites?

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial, having nothing to do with the issues in this case, and invading the province of the jury.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I have, I have answered that before.
Q. Well, just what is your understanding of it?
A. My understanding of your question is this, would I advocate the adding of nitrites to flour?
Q. In any quantity? A. In any quantity.
Q. However minute.
A. Yes, sir, if there was no object to be accomplished
2455 by so adding it.
Q. No object as respects health or quality of food.

Mr. Elliott: We can't hear this conversation.

The Court: I think that objection is pretty well taken.

A. If there is no object to be accomplished—

The Court: No object as to health.

Q. Or quality of the food, he says.

The Court: Bettering the food.

A. Bettering the food, I would not add them; I would not advocate their being added.
Q. You would advocate their being prohibited from the standpoint of health, would you not?

The Court: He may answer.

Counsel for claimant objected to the question as asking for an improper conclusion.

To which ruling of the court claimant then and there duly excepted.

A. No, I don't know that I would.
Q. Well, I mean strictly from a standpoint of health, we will take this fact into account, that they are added by means of an engine making a gas and constant liability of expansion; for example, one man might use five horse-power to make the gas to go into a hundred barrels a day, we'll say, and another man might use half a horse-power to make the gas go into a thousand barrels a day, depending upon what they want to do with respect to appearance of food, not as respects quality, but as respects appearance, merely. Now, then, on the same assumption that there is no purpose as respects health or quality of food, and unskilled hands are putting poison into the staff of life, the products of flour—
A. In extremely minute amounts, you add that to your question?
Q. Well, in extremely minute amounts but the liability of greater amounts constantly presents by reason of the
2456 fact, don't you see, here is a man who believes it is pure air and he has a five horse-power in there, and he

is putting out a hundred barrels, and he squirts it into both generators all he can get into the flour?

A. That is getting to be a pretty long question.

Mr. Butler: Well, I withdraw it.

Judge Scarritt: I object to that.

Mr. Butler: I withdraw the question.

Judge Scarritt: Nonsense and ridiculous.

By Mr. Butler:

Q. You say you would not, there being no purpose from the standpoint of health or the quality of food, recommend or advise the adding of any nitrites, however minute, to flour?

A. If there was nothing to be accomplished.

Q. Would the fact that poisons existed in other foods by addition or from the nature of the foods and other nitrites, be a factor in the element of nature?

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial, and asking for a wrongful conclusion of the witness, having nothing to do with this case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. It could depend on a good many things, what the other poisons were, their amounts, and so on.

Q. Call them nitrites, call them the same poisons added to other foods or naturally produced in them by decay, and we'll say that the amount of nitrites in other foods is very substantial and you get enough so that the system is pretty well loaded already, then would you not say that there was a very strong reason for keeping nitrites out of flour?

A. No, I would not.

Counsel for claimant objected.

Q. What is that? A. I would not.

Q. Suppose that in the other foods there were all the
2457 nitrites that could be used with safety to health, then would you not say that they ought to be kept out of flour?

Counsel for claimant objected as incompetent, irrelevant and immaterial and not based on any evidence.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. It is very difficult for me to assume these things.

Q. Well, I ask you to assume that as a scientist; you are not responsible for the fact, I take that responsibility, and leave it to the jury whether it exists or not. Now, I ask you to get your learning as a scientist, if in other food would have already been added all the nitrite poison, viewed from the standpoint of health people can safely bear, then do you not think it right, viewed from the standpoint of health, to exclude them from wheat flour?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. No, I don't know that I should advise their exclusion; I think there are other ways of accomplishing the warning that I would give not to take any more nitrites.

Q. You would not exclude them from flour but keep on adding if the health of the people is already imperiled by poisonous adulterants in foods, and the question now before you as a scientific gentleman is this, shall or shall not poisons be added to flour merely to affect the color, what would you advise as a professional gentleman, to add them or to keep them out?

Counsel for claimant objected to the question as asking for a wrongful conclusion of the witness, not based on the testimony in this case, and having nothing to do with the issues.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

2458 A. Does your question involve the same elements as the previous one, cumulative nitrite poisoning?

Q. Yes, and formaldehyde poisoning, and chromate of lead poisoning, the health of the people is already imperiled by adulterant poisons, including nitrites in large numbers of doses every day, already in danger, and we assume that, and then I ask you as a learned gentleman and pathologist whether or not we ought to add them to flour or exclude them from flour?

Counsel for claimant objected to the question for the reason of being a mere argument intended for the jury and not for the witness.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. Please answer, Doctor?

A. Well, I am trying to, Judge. I don't believe in poisoning the nation wholesale, if that is an answer to your question.

By the Court:

Q. Don't believe what?

A. Don't believe in wholesale poisoning like he has pictured to me.

By Mr. Butler:

Q. On the assumption of the question would you be tempted to keep nitrites out of flour or to put them in?

Same objection by claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. No, I am not concerned about the presence or absence of nitrites in flour.

Q. Well, I say, assuming the fact to be that nitrites in baking foods and in other foods, substances which are added are already a peril to health, assume that to be the fact?

A. Yes, sir.

Q. Without the flour. Then I ask you whether, as a gentleman concerned in the processes of health in the country, you would advise the adding of them to flour or would you advise to keep them out of flour?

2459 Same objection by claimant.

Objection overruled; to which ruling of the court claimant then and there duly excepted.

Q. You say you are not concerned with flour, but I want your professional view now.

A. Well, if I could believe that people were generally on the point of dying from poison, I would not give them any more poison, Mr. Butler.

Q. Well, before you would not want to give them any more poison, must you be convinced that they are on the point of dying from poison?

A. I must be convinced that the ordinary dietary of people is very harmful.

Q. Before you would advise keeping poisoning out of food you must be convinced that the food already is very harmful, must you?

A. Yes, I have no evidence of that.

Q. Now, if you are convinced that food is already more harmful you will be in favor of adding poisoning to food if it can be justified commercially?

Same objection by claimant.

The Court: overruled the objection; to which ruling of the court claimant then and there duly excepted.

A. I don't know that I should base it on a commercial justification.

Q. You won't base it on consideration of health to add any poison it does not hurt health to add any poison to bread, does it, does that help health any, Doctor?

A. It might under certain conditions, yes.

Q. I mean, now, take the human family as a race, I want to ask you if adding nitrite poison to the bread in any quantity however minute helps health?

Counsel for claimant objected to that as asking for a wrongful conclusion, not based on any testimony in this case, bringing in outside issues, and not trying this case at all.

The Court: He may answer.

To which ruling of the court claimant then and
2460 there duly excepted.

(Question read by the reporter)

A. I am unable to answer that question.

Q. Don't you know? A. No, I don't know.

Q. What is your professional opinion whether or not it would improve the health and strength and power of the human race to add poisons in small doses to every bit of food which is the product of flour that they consume; can you answer that?

A. Would you include in your question one poison and make it very minute amounts?

Q. Yes, nitrites. A. I would say it was harmless.

Q. I didn't ask you that.

A. I beg pardon, I misunderstood.

Q. I said improve the health of the people, the health of the race, by putting in a little poison?

A. Maybe, might be possible.

Q. What makes you say that, Doctor, now, let me see,—I withdraw that. Does the history of the race justify the inference that the people who eat poisonous food develop into greater people than those who eat good, wholesome food?

A. No, but it is just as easy for me to assume the one combination as the other, Mr. Butler, when you put these poisons in minute amounts.

Q. Does it? A. The best of my judgment.

Q. All right, suppose we put that minute amount in the bread and a like minute amount in every other article of human food?

Same objection by counsel for claimant.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. Can you tell us whether or not that would be a good thing or a bad thing for health? A. The same poison?

Q. Yes.

A. If you are dealing with the same poison, and added minute amounts and took enough of the different varieties of food, you would sooner or later reach your danger point; I would not recommend.

Q. Where is the danger point?

2461 A. When you approach poisonous doses.

Q. Where is the danger point, how much is safe to feed babies, how much nitrite poisoning in bread is safe to feed babies from the time they are born until they die of old age, how much is safe? A. How much nitrites?

Q. Yes, in view of the fact that there is nitrites in ham and nitrites in the air and nitrites in the water and nitrites in decaying vegetables and the same amount of all unknown amounts, now, how much would be safe to add to the flour?

A. Well, I have no evidence of nitrite poisoning in babies, generally speaking.

Mr. Butler: I move to strike that out.

The Court: It will be stricken out; not an answer.

Q. You are not a doctor, are you; you have no evidence of nitrite poisoning in rats either, have you?

A. No, sir.

Q. How much nitrites would be safe to add to flour in view of all the other nitrites of unknown quantities that existed in the air, and in the water, decaying vegetables and cured hams, and all those things, the same poisonous nitrites, how much ought we to add to the flour in order to make the baby grow; is that the reason for doing it, if you have regard to health, Doctor, if you have regard to babies' health and welfare?

A. I don't know that nitrites make babies grow.

Q. Yes, sir; well, how much would be safe, having regard to the health?

A. I think a considerable amount of nitrites are possible.

Mr. Butler: I move to strike that out.

The Court: Yes, sir.

Q. I want you to define to the jury how much we may safely put in the bread in view of the unknown amounts there are in other goods?

A. I could not testify as a toxicologist, you are dealing with poisons, and—

Q. Can you say that any would be safe in the bread in view of the unknown amounts of other things?

A. I certainly can.

2462 Q. How much, then? A. In small amounts.

Q. What do you mean by small amounts?

A. Minute amounts, so minute that we cannot detect during life or after death any evidence of disease.

Q. All right, we'll double that amount, would that be safe, double the minute amount you first thought of?

A. Yes, I think it would.

Q. Quadruple that? A. Yes, sir, I think it would.

Q. A hundred times that? A. I don't know.

Q. A thousand times?

A. I think it would be dangerous, approach the dangerous ground.

Q. So that you say that these nitrites if in sufficient quantity are dangerous and poisonous in food?

A. If in sufficient amounts they will produce a nitrite poisoning.

Q. And still you favor putting them in?

A. If there is any object to be accomplished.

Q. If you could make money by putting them in, you would say "put them in"?

A. No, I would not put it on a commercial basis.

Q. What do you mean when you say if there is any object to be accomplished? A. If there is any desirable object.

Q. What do you mean by desirable.

Mr. Elliott: I object to it as mere repetition.

A. I have answered many of these questions.

Q. Well, I am about through, but I have not asked you to tell what object will justify adding poisons to flour yet; if I have you just repeat it and I will let you go.

A. I haven't any particular object to advocate the putting of nitrites in flour.

Q. Well, you said you would advocate putting it in flour if there was any object for it?

A. If there was a good reason for doing so.

Q. Now, what do you mean by a good reason; what good reason can there be for putting poison in flour, that is what I am trying to get at.

Counsel for Claimant objected to the question.

The Court: He may answer.

2463 Q. What good reason can there be for putting poison in flour, that is what I am trying to ask you as a pathologist?

Judge Scarritt: Well, I can conceive of several.

By the Court:

Q. Go on and answer, Doctor; what reason?

A. The question, as I understand is what reason can you conceive of putting nitrites in flour, or poisons in flour?

The Court: Yes.

Q. Keep adding poisons to flour every day all the time?

A. I believe that it is done to make the flour white.

Q. Yes, sir. A. And the people like white flour.

Q. Yes, sir.

A. Whether that is a good reason or not I do not pretend to pass on.

Q. Well, is that to your mind, viewed from the standpoint of health, a good reason for permitting millers to put such nitrite poisoning in flour as they think will make the flour more salable because more white?

A. Providing the nitrites are in harmless amounts I would have no objection to their doing that.

Q. And you dare not write on that blackboard what amount of nitrites you consider safe, dare you, for any person?

A. I don't care, I am not testifying as a toxicologist and this involves the use of a poison and a poisonous test.

Q. Will you write on the blackboard so we cannot forget it, the maximum amount of nitrite poisoning which you will approve of to be added to the food per pound of flour this whole country over? A. Yes, I will do that.

Q. The maximum amount that you will approve of?

A. Of course, my doing this is simply as a layman; I am not doing this as a toxicologist.

Q. The maximum amount of every pound of flour consumed in the United States.

A. 1000 X, this would be the maximum 1000 times the amount now used. Thousand times the amount now used.

(Writes on blackboard "1000 X the amounts now used".)

Q. Go to the blackboard and write down the amount
2464 now used? A. I don't know the amounts now used.
Q. Then without knowing the amount now used in order to help your friends, you swear that we can multiply it by a thousand [—] be safe?

Judge Scarritt: He has been asked about 1.8.

Q. I think that is a fair question, go and put down your multiplier.

The Court: That is a matter of primary arithmetic.

By Mr. Butler:
Q. As a layman, now, not a toxicologist or a pathologist, go and put down your multiplier.

The Court: Put down your thousand, then your X, then something to the right of it.

A. Can I state that as well as I can put it on the board?
Q. No, I don't want to forget it.

Judge Scarritt: He can state it.

(Witness writes on the blackboard: 1000 X the amount now used, 1000 X the amount of nitrites which in flour human experience has proven harmless=)

By the Court:
Q. Now, say equals what, equals what?

Judge Scarritt: Let him write it.

The Court: No, it is primary arithmetic, equals what?

A. Equals the amounts which would be inadvisable.

By Mr. Butler:
Q. Set the amount right down so we can measure it and weigh it. A. I cannot do that.
Q. In figures.
A. That would involve my testifying as a toxicologist.
Q. And this is only as a layman? A. As a pathologist.
Q. Now, let me see how this scientist as a layman reads: "1000 X the amount now used, 1000 X the amount of nitrites which in flour human experience has proven harmless=— equals how much?
2465 A. Equals the amount which we—

By the Court:
Q. Equals death, or what?
A. No, equals inadvisable amounts, amounts which may not be recommended, Your Honor.

By Mr. Butler:

Q. Here is a grain of nitrite, the average dose is put down by the Pharmacopoeia. How many times that grain would you justify to each ton of flour; human experience shows that this amount is taken, a few of those grains, three or four times a day, did not even have medicinal effects. Now, as a pathologist, Doctor, how many grains of nitrite of sodium would you justify in adding to a pound of flour?

A. I would not have any reason for recommending that any would be added.

Q. How many do you believe could be added with safety?

A. Why, I would have to know the quantity ordinarily taken in a day in the flour that is consumed by human beings.

Q. That is the best you can answer, is it? A. Yes, sir.

Q. And have you written on the blackboard the best reason that you can give, the average amount, that is safe for us to take?

A. I have written approximately what I believe to be safe.

Q. Would that not be more than a grain a day?

A. I do not know.

Q. In a pound? A. I do not know.

Q. If more than a grain a day in a pound of flour, a grain a day per person, would you justify it?

A. A grain a day per person?

Q. The earth around and the world over?

A. Of sodium nitrite?

Q. No, of amyl nitrite, the nitrites are all like poison, and two drops of amyl nitrite will prostrate you.

Counsel for the claimant objected because no evidence on which to base it.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

Q. And amyl nitrite will be poisonous?

Counsel for claimant objected.

The Court: He may answer.

2466 A. I don't know what amyl nitrite—I believe it is more poisonous, but, Your Honor, I am not a toxicologist.

Q. We are talking about amyl nitrite.

A. The amyl nitrite I don't know about.

Q. How many grains of amyl nitrite would you justify adding to the bread, food stuffs, of each individual?

A. What for?

Q. I mean for any purpose, to make the bread look whiter and preserve health, and make money for the millers?
A. I could not give you the amounts.
Q. Would you add any?
A. I don't know that I would add any.
Q. Don't you think that would be injurious to health?
A. I couldn't say, I have no experience.

Mr. Elliott: I object to this as incorrectly reporting the evidence, because there is not a particle of testimony from any source that anybody ever added nitrites to flour to make it white, amyl nitrite.

The Court: He may answer.

Q. If two drops of amyl nitrite inhaled will make a person feel the effects of the nitrite, how many drops may the millers add to flour without impairing health?

Counsel for claimant objected to that because it is not based on any evidence in the case.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I don't know.
Q. Do you believe as a pathologist it would be wrong to use so deadly a poison as amyl nitrite in flour for any purpose?

Same objection by claimant.

A. And in any doseage?
Q. Yes, sir. A. No, I don't know.
Q. How much would you admit in? A. I couldn't say.
Q. Well, when you can't say would you admit the part of a drop in a loaf of bread, one-tenth of a drop of amyl nitrite in a loaf of bread?

2467 Same objection by claimant.

The court overruled the objection.

To which ruling of the court claimant then and there duly excepted.

A. I don't know of any reason of adding amyl nitrite to flour for any purpose whatsoever.
Q. Don't you know that the amount of nitrites that the evidence shows has been added to flour is greater per pound of flour than two drops of amyl nitrite which will give heavy medicinal re-action? A. Inhaled?
Q. Yes, sir, don't you know that to be the truth?

A. You want me to compare the one with the other?
Q. No, I am now asking you if you don't know it to be the truth that the amount of nitrites in a pound of this flour seized is greater in weight than two drops of amyl nitrite?
A. No, I don't know that.

Mr. Elliott: I object to that question because not supported by any evidence in the case.

The Court: I want to say once and for all, and I have said it a good many times, that I am not passing on the evidence. Of course if the assumption is wrong, why, the conclusions are of no value, or very little.

A. No, sir.
Q. Assume that to be the fact, Doctor, rely upon it, as the truth, then would you say that it would be safe to add a thousand times the amount now used?
A. I cannot compare amyl nitrite with the nitrites in flour.
Q. Let us assume that there is half a grain of nitrite added to a pound of flour by bleaching, let us assume that, will you say that it will be safe to multiply that by a thousand, a thousand times the amount now used?

Judge Scarritt: We object to that as not based on any evidence.

2468 The Court: He may answer.

A. No, I don't think it would.
Q. Suppose there is 1 1/100 of a grain added to the pound of flour, would it be safe to multiply that by a thousand?

Same objection by claimant; same ruling; to which ruling of the court claimed then and there duly excepted.

A. Might be.
Q. You think it would be? A. Might be.
Q. Ten grains to the loaf?
A. No, I doubt if that would be safe.
Q. You don't think ten grains of this poisonous nitrite?
A. I don't know why anybody should take ten grains of nitrites in a loaf of bread.

Counsel for claimant objected as not based on the evidence.

Q. I'm trying to find out how much you think is safe. You have marked down there that thousand times what is used now. Now, I told you that there is one 1/1000 of a grain used.
A. In what?
Q. In a loaf of bread.
A. And in order to eat one grain of nitrite you would have—
Q. Eat a loaf of bread?

A. Eat a thousand loaves of bread.
Q. No, one loaf of bread. A. In order to get one grain?
Q. Yes.

Counsel for claimant objected as not based on any evidence.

Q. On your prescription each loaf we take one grain of nitrite? A. Yes, sir.
Q. Would you recommend it?
A. I think it would be very harmless.
Q. You would recommend it for children? A. Yes.
Q. You would recommend it for the sick?
A. If there is any reason for doing so, yes, sir.
2469 Q. Oh, no, I am not speaking of reasons, I am speaking of health.
A. I would not recommend it for any general use unless there was some reason for it.
Q. You would strike out the minutest quantity if you viewed it in the light of health alone, wouldn't you?
A. If there was no reason for doing it.
Q. No reason except health, you would eliminate it, wouldn't you, wouldn't you, Doctor?
A. Well, I have no knowledge of its being deleterious to health.
Q. Well, I say you have no knowledge that it is not injurious to health?
A. In the test you are assuming a grain in the loaf, possibly, yes.
Q. A grain in the loaf, you have no knowledge that the amount of nitrite in the loaf will injure health?
A. No, I have no knowledge of it.
Q. Do you think it is safe to give a person a grain of nitrite every day they live?
A. It is my impression, but I am not a toxicologist, I could not testify to these doses of poisons.
Q. All right. Do you think it is safe to give a five-year old boy a grain of nitrite from that time on until his death, is that your opinion? A. Might be.
Q. Well, do you think so, have you been answering that a grain of nitrite—
A. For how long, and how often, and so on?
Q. Every day. A. Once a day?
Q. Every time he eats bread.
A. Every time he eats a loaf of bread?
Q. Yes, and we'll assume he eats the bread each day.
A. A five year old boy?
Q. Yes, as long as he lives he has to take a grain of this nitrite every day.

Counsel for claimant objected to the question.

2470 The Court: You may answer.

To which ruling of the court claimant then and there duly excepted.

A. I don't think it would hurt him.

Q. Would you as a medical man, if there was no reason for it, justify adding a grain of poison, these nitrites, every day to the bread stuffs of the human family?

Same objection [my] claimant.

A. I would not, not add any nitrites.

Q. If there was any reason for it, like making the flour whiter? A. I don't see why it should not be added.

Q. You think there would be a grain added each day, how much would you justify as a reason?

A. The minutest amount that would accomplish the purpose desired.

Q. Suppose we take a grain to the loaf of bread, would you add that?

A. This I would aim to accomplish against my best knowledge of the poisonous effect.

Q. Well, your best knowledge of the poisonous effect would be that a grain would be harmless?

A. That is my opinion; it is not based upon any experience.

Q. A grain and a half? A. I don't know about that.

Q. Two grains?

A. Two grains might be perfectly safe for an adult per loaf of bread.

Q. I mean for the human family, as a whole, each member of it, two grains per loaf of bread?

A. Well, it might be perfectly safe.

Counsel for the claimant objected.

Q. Three? A. I think it would be risky.

Q. Two and a half? A. I don't know.

Q. So you think it would be safe for two grains per loaf of bread per day, for each person capable of eating a loaf of bread per day, two grains of nitrite poison?

A. That is my impression but of course I am not a toxicologist; I can't testify to these poisons.

2471 Q. Doesn't every medicial man know that when this amyl nitrite, in solution, and you inhale it, two drops will make one sick, and three will make him rattled and two and three or four will kill in some cases?

A. We don't inhale flour.

Q. You don't inhale flour? A. No.

Q. So therefore you say that you could well introduce poisons in the flour to the extent of two grains per loaf of bread for to get it a little whiter?

A. Well, all of our experience is based upon the flour going into the stomach.

Q. Yes, I know, and you say from your experience as a pathologist that two grains per loaf of bread would be all right in order to make flour a little whiter?

A. That is my impression as a pathologist, yes.

Q. Now, do you believe that to be true, and would you recommend as a publicist to the people that it is safe, if you want to, to add two grains of organic nitrite poisoning to each loaf of bread?

Counsel for claimant objected to the question for the same reason.

The Court: He may answer.

A. I would not recommend it without more experimentation than I have got, if I was called upon.

Q. How many rats would you have to examine before you did? A. I would examine rats and other animals too.

Q. How many other animals would you have to examine?

A. Oh, rats and dogs and lots of animals, before I would take the position of passing upon such a weighty question as you have asked me.

Q. What would you examine in the rats and dogs and cats and bears, and so forth, to find out whether or not two grains of nitrite organic poisoning per loaf of bread would be a good thing for the human family?

A. I would examine for evidence of destruction of the blood.

Q. Would you look at the spleen?

A. I would first of all.

Q. What else?

A. I would look on the lymphatic glands too, but especially the spleen.

2472 Q. Yes, and if you found no evidence of chronic methemoglobinemia in the spleen, you would say put it in the bread, would you, is that it?

A. No, I would say I have no evidence that such amounts have any harmful effect.

Q. Yes, how much nitrites did you understand Dr. Haines gave to the rats?

A. I don't remember the doseage, it is in testimony yesterday.

Mr. Butler: Do you remember it, Mr. Elliott?

Mr. Elliott: No, I do not.

Q. Wasn't it a grain a day, or something like that?

A. I don't remember.

Q. Now, without ever having found any evidence of chronic [met] methemoglobinemia in the spleen of any animal living or dead, if we hire you to tell us whether two grains would be safe in each loaf of bread, you would go and look at some more spleens, and if you did not find any evidence of chronic methemoglobinemia in the spleens, you would come back and say "put in two"; then if we wanted to put in three, you would go and try it again on the rats; and if you didn't find what neve has been found, you would tell us to put in some more, would you?

A. I certainly would subject the matter to experimentation.

Q. I know, but if you found negative results on these spleens that would justify putting in more?

A. I would report to you the result of the experiment; I would not be called upon to recommend what you did.

Q. But I would ask your opinion, assume that I did, what would you say, could you put in three if you didn't see it in the spleens?

A. If you asked my opinion, that would be another matter that we have to discuss between us.

Q. Well, I am discussing it with you now. What would you say, let us assume we had two grains in each loaf, and then you examined the spleens of rats and didn't find anything that never was discoverered, no chronic methemoglobinemia
2473 in the spleens; then I would say, Doctor, will it be safe to put in three, and if you examined some more spleens and didn't find a thing that never was found, would you tell me to put in the three?

A. Oh, that involves something that is not within my experience at all, Mr. Butler.

Q. I know, but you said before you would justify more than two grains in the loaf you would have to examine the spleens of some lower animal that had been treated with it?

A. For destruction of the blood.

Q. That is, chronic— A. Methemoglobinemia.

Q. By nitrites?

A. By nitrites, in this question, yes, sir.

Q. Now, you say nobody ever heard of it?

A. We know it occurs in the acute methemoglobinemia.

Q. You know it never has occurred, never has been observed, but you knew it would occur if they got nitrites enough?

A. In acute poisoning it occurs.

Q. I am speaking of the chronic poison, you don't know it would also occur if they got nitrites enough?

A. That is a matter of common knowledge amongst pathologists.

Q. Now, then, how many grains of nitrites per day will it take to chronically poison a guinea pig so that the constitution will show it?

Counsel for claimant objected to the question as repetition.

A. I don't know.

The Court: He may answer.

A. I don't know.

Q. Didn't you tell me— A. I don't know.

Q. Didn't you tell me that no such thing ever was found?

A. I don't know how much nitrites it would take to produce the chronic methemoglobinemia in a guinea pig.

Q. Will it produce it?

A. Most certainly, I can vouch for that.

Q. How? A. My experience as a pathologist.

Q. Did you ever find it?

A. I found analagous conditions.

2474 Q. No, but did you ever find that? A. Anything—

By the Court:

Q. No, the question is did you ever find it?

A. I have never seen the result in the constitution of a chronic methemoglobinemia, and I have answered that question.

Q. In any animal? A. Yes, sir.

Q. Well, you have looked for it over and over again?

A. No, sir.

Q. You have looked for it thousands and thousands of times?

Counsel for the claimant objected.

A. I have examined thousands of spleens for pigments and never found any evidence of a chronic methemoglobinemia, no, sir.

Q. Thousands and thousands negative results show that it could not happen? A. No, sir.

Q. Does not the negative result with Dr. Haines, that you got on Dr. Haines' rats show that it could not happen?

A. Not at all; it simply shows that in the dose he used it did not happen; that is all it shows.

Q. Oh, yes, so the negative result is absolutely worthless?

A. Not at all, it had positive value so far as that experiment went.

Q. How much chromate of lead would you justify adding to coffee?

A. I don't know anything about chromate of lead except the name.

Q. How much formaldehyde would you justify adding to milk?

Counsel for claimant objected to the question as repetition.

The Court: He may answer.

A. I would not add any formalin to milk.
Q. Why? A. Because I don't think it is a good thing.
Q. Why? A. Because formalin is a poison.
Q. Why is it a poison? A. I don't know that.
Q. Isn't it all right to add poison to milk?
A. I don't know why.
Q. Formalin poison? A. I don't know why.

Q. Well, why in quantities, in so minute quantitation
2475 that it won't hurt?

A. I don't know what could be accomplished by it in such minute quantities, I would make it safe.

Q. I call your attention to Exhibit 75, a little flask marked B on that exhibit, it shows four milligrams of sodium nitrite, the equivalent of the nitrite at the rate of 1.8 parts to the million in a pound of the flour that was seized, and then ask you to assume that that shows four milligrams of nitrites exist in a pound of the seized flour, four milligrams of it there; now, that exists in each pound of seized flour.

Judge Scarritt: We object to that assumption; there is no evidence that it does exist there at all.

Mr. Butler: Yes, Mr. Morey proved it.

Judge Scarritt: He got that from a drug store, didn't get that out of the flour, that stuff you got there.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

By Mr. Butler:

Q. A pound of the seized flour shows four milligrams of poisonous nitrites. Now, a thousand times four milligrams would be four thousand milligrams. Now, there are sixty-five milligrams in a grain. If you divide four thousand by sixty-five milligrams in a grain, sixty-one plus is produced, which would show according to your answer, applied to the bleached flour, that sixty-one grains of nitrite organic poisons might safely be added to each pound of flour. I call your attention to that computation to the end that you may understand the testimony as it is applied here.

Judge Scarritt: I object to that as not based on any answer that the witness has given.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

2476 Q. Do you want to change it on that assumption of fact?

Judge Scarritt: I don't understand what your assumption was.

Q. That is his thousand multiplied by the amount now used, that is in this flour seized, would give sixty-one grains of poisonous organic nitrites per loaf of bread, and ask whether the Doctor desires to modify that or not, I don't care, I simply wanted to call his attention to the computation.

Mr. Elliott: If Your Honor please, we object to that question as incorrectly reporting the evidence; there isn't any evidence at all that four milligrams of sodium nitrite is in flour.

Mr. Butler: You did not listen to my question. Mr. Morey, a witness, brought before the court some sodium nitrite he got in a drug store, four milligrams, to show the amount of poisonous nitrite that there would be in a pound of this flour, according to the lowest analysis 1.8 parts per million, that is four milligrams. Now then assuming that there are four milligrams of poisonous—organic nitrites in each pound of the seized flour, thousand times that, would put sixty-one grains of poisonous organic nitrites in each pound of flour, and I ask you, Doctor, whether in your opinion that would be injurious to health?

Judge Scarritt: We object to that because Mr. Morey swore himself that there was no organic nitrite poisoning in this flour.

The Court: For reasons apparent to you gentlemen, that I am not passing on what the evidence is, the objection will be overruled.

To which ruling of the court claimant then and there duly excepted.

A. No, I don't think I could advise that.

2477 Q. Now, take your next proposition of fact, which you have written on the blackboard, would you say that it would be safe to use a thousand times the amount of nitrite which in flour human experience has proven harmless. Do you want that to stand?

A. That is my general notion.

Q. Now let us assume that human experience has proven that two grains is harmless; you say it would be in your opinion. Now let us assume that that is the maximum amount that human experience has proven to be harmless?

A. Two grains of—

Q. Nitrite poison per pound of flour, that is the amount I understand you— A. Assuming that?

Q. You prove that I understand, from the standpoint of health? A. No, I don't think two grains is poisonous.

Q. Then would you say that you would recommend a thousand times that amount?

A. A thousand times what amount, of the first calculation or the—

Q. No, two grains, we will assume that human experience has shown that two grains of nitrite is not harmful, just what your opinion is then would you say that a thousand times that would be safe?

A. I think it would be approaching the danger point.

Q. You think 2,000 grains per pound of flour would approach the dangerous point? A. Yes, I do.

Q. You think it might disturb digestion?

A. I don't know what it would do.

Q. If you had to eat 2,000 grains of nitrites in each loaf of bread weighing a pound— A. Sodium nitrite?

Q. No, poisonous organic nitrites? A. What one?

Q. Amyl.

A. I think that would be very dangerous, amyl nitrites.

Q. You think it might impair the health of the nation if that was made customary? A. Certainly if it was inhaled.

Q. What would be the fatal dose? A. Inhaling?

Q. Yes, sir. A. I don't know.

2478 Q. And sodium nitrite what is the fatal dose?

A. I don't know.

Q. Would not 61 grains in all human probability if administered at once kill half the men on that jury?

A. No, sir.

Q. It would not? A. No, sir.

Q. What is a poisonous dose?

A. I don't know but large doses of sodium nitrite have been taken by mistake without death.

Q. How much?

A. I don't know, the exact figures, I could get a report if you wish to know exactly.

Q. Do you know why it was that Dr. Webster when he was trying to find methemoglobin in the blood declined to take more than two grains, a big powerful young man?

A. No, sir.

Q. I think some of the others that he administered it to.

Mr. Elliott: No evidence he declined to take anything at all.

Mr. Butler: Why did he take it, because if he was after methemoglobin a little more would have done it.

Mr. Elliott: That is your assumption.

Mr. Butler: He gave the other fellow a little more, I am not sure.

Redirect Examination

By Mr. Elliott:

Q. Dr. Lecount, amyl-nitrite is very volatile?

A. I believe so.

Q. I will ask you if the deposit of pigment in the spleen is not the evidence of methemoglobinemia?

A. It is an evidence of methemoglobinemia.

Q. And in your experience is that one of the most reliable tests that you can apply?

A. That is the one that I would use, that test being in my field of work.

Q. Is that the most reliable test that you personally know of? A. It is.

Mr. Butler: What test is that?

Mr. Elliott: Examination of the spleen.

2479 Witness: For pigment.

Recross-Examination

By Mr. Butler:

Q. Would 61 grains of nitrite of sodium administered daily to a human being for a month give methemoglobinemia in the spleen of a man?

Counsel for claimant objected to the question.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. I don't know.

Q. Would it in the rat? A. I think so.

Q. Would it— A. 61 grains given to the rat a day?

Q. Every day for a month?

A. Oh, yes, I think it would without any question.

Q. In a guinea pig? A. Yes, sir.

Q. In a guinea pig you think that 61 grains a day would give chronic nitrite poisoning to the guinea pig?

A. Yes, sir.

Q. Why didn't you give it to the guinea pig and find out for sure before you came up here?

Mr. Elliott: I object to that this is not proper recross-examination.

The Court: I don't think it is. Anything further on that point?

Mr. Butler: That is all.

The Court: Now the defendant will call their last scientist.

2480 Morning Session.

Friday, July 1, 1910.

Dr. Paul Schweitzer, called as a witness on the part of claimant, being duly sworn, testified as follows:

Direct Examination

By Mr. Elliott:

Mr. Elliott: If your Honor please, this witness is somewhat deaf and I will have to talk loud to him.

The Court: I am sorry for your misfortune but I am glad for the balance of you so you will have to speak up.

Q. Prof. Schweitzer, give you name, age and residence?
A. Paul Schweitzer.
Q. And your residence? A. Columbia, Missouri.
Q. How long have you resided at Columbia?
A. I have resided in Columbia since 1872.
Q. What has been and what is now your occupation or official position?
A. My present position is Emeritus Professor of Chemistry of the University of Missouri.
Q. Have you any degree, scientific degree?
A. I am a member of the American Chemical Society; a Fellow of the American Association of Science; I am a member of the St. Louis Academy of Science; a corresponding member of the New York Academy of Science; I am an [honory member of the Missouri Pharmaceutical Association.
Q. What has been your training, or early education in chemistry?
A. I studied in Berlin largely under Henry Rose and Schneider and Sonnenchein, and in Gottingen where I took my degree.
Q. What has been for the past ten years, your speciality or specialities in chemical science?

2481 A. When I was called to Missouri in 1872 my position was Professor of Analytical and Applied Chemistry. I became two years later the head of the department, and as such professor of agricultural chemistry in the College of Agriculture and Professor of Physiological Chemistry and Toxicology in the medical school of the University, and I organized as a part of my regular work with the students and calls what I called then domestic chemistry. My specialty perhaps during the past ten or fifteen years has been analytical chemistry in reference to toxicology and domestic chemistry or sanitary chemistry.

Q. What do you mean by domestic chemistry?

A. Domestic chemistry deals with all those matters as to fact and principle upon which rest primarily the health of the members of the family.

Q. What subjects have you given special attention to, if any?

A. In these classes I dealt especially with atmospheric air in relation to health, ventilation, respiration, that means inspiration and expiration, the composition of air, water, milk and foods; they were the main subjects that I treated.

Q. Now in reference to air what phases of the subject did you deal with?

A. I dealt with the subject in reference to the consumption of air which we took into the lungs and exhaled air, especially in confined rooms demanding an exchange, usually called ventilation; also with the constitutents of air that might perhaps be looked upon either as somewhat strange or demanding attention.

Q. Does air contain nitrous acid?

A. My attention to the air containing nitrous acid was first arrested in 1860 or 1861 by the publications in numerous forms of Prof. Schoenbein, who was looked upon and was looked upon until his death as the authority on matters of this kind, and as a result of my attention to what was published and in a minor way to my own tests, I came to the conclusion that atmospheric air invariably contains nitrous acid.

2482 Q. How much of it is there in the air?

A. The amount that I assume as being contained in air, and which I think is also stated by authorities in treatises is 5/1000 of one part in 10,000 volumes of air.

Q. What becomes of this nitrous acid when air containing it is inhaled?

A. In order to answer this question we have to decide as to the total amount of air that we inhale, and this total amount of air that we inhale for a grown person I assume, and other

authorities assume, to be during the 24 hours, to be 10,000 liters—a liter is a little bit more than a quart; these 10,000 liters would then contain, as I calculated it, 5 cubic centimeters of this nitrous or nitric acid, 5 cubic centimeters.

Q. 5 cubic centimeters.

A. 6.5 cubic centimeters, I think, calculated to be about 1/5 of a grain. We take this air into the lungs, in the moist and warm air in the lungs, and in the narrow passages most of this is condensed and retained, and as a consequence of it we find invariably amounts of this nitric acid in the saliva, or as pointed out first in 1862 by Schoenbein, and also in the fluids of the nose, this amount consists of what is commonly said to be nitrous and nitric acid, most of it in my judgment is nitrous acid, but if I take it to be half and half, then the amount would be instead of a 1/5 of grain, 1/10 of a grain.

Q. Are you giving the amount a person would take into their system?

A. This amount 1/10 of a grain of nitrous acid would be near wholly retained by the body.

Q. Is that the amount that the average adult would take into his system in 24 hours? A. During the 24 hours.

Q. One— A. One-tenth of a grain.

Q. I will ask you this, would the amount of nitrous acid in the air by continuous respiration of man and beast become less in time?

2483 A. If we were to calculate the total amount of this during the 24 hours by multiplying it with the number of people on our globe and also the animals, we would virtually get on the whole a very small amount of it in the end; the amount in the air would, of course, be decreased unless there were natural processes going on in the air by which this amount would be constantly replenished in the atmospheric air.

Q. In your judgment could nitrous acid in amounts such as you state are absorbed by man, in 24 hours, be called poisonous?

A. I never have looked upon such an amount of nitrous acid as being poisonous. I never called it so, and I don't think that I could be made to call it so by any of the examinations that have been made by chemists and published.

Q. If the bleached flour contains 1.8 parts per million in nitrite reacting material, how much of such material would be found in one pound of flour in grains?

A. Under these conditions one pound of flour would contain just 1/80 of a grain of nitrous acid.

Q. How much of it would be found in one pound of bread baked from such flour on the assumption that none of it was lost by fermentation with yeast and by baking?

A. If the grain from which such flour had been made was good healthy grown, then such flour should yield for each pound of flour about a pound and a half of bread, perhaps a little less; if one pound of flour makes one and one-half pounds of bread, then one pound of bread, on the assumption which you state that in the process of making this flour into bread nothing was lost would be Oh 1/120 of a grain.

Q. One one hundred twentieth of a grain. If a person consumed daily one pound of such bread, what relation in quantity of nitrous acid material would there exist between the amount in the bread consumed and in the air inhaled?

A. It would be simply the relation between 1/10 and 1/120, that is to say, the amount of nitrous acid that we receive from the air for 24 hours would be 12 times as great as the amount of nitrous acid that we receive by eating one pound of such bread a day.

2484 Q. Could a daily ration of bread such as produced from bleached flour and under the most stringent conditions of not having lost any nitrous acid material in the baking, be deemed deleterious to health if continued during the years?

A. I do consider, if it is otherwise well made, to be just like any other bread, just as healthy as any other bread.

Q. Have you analyzed mineral and domestic waters?

A. Yes, I have analyzed probably more waters than any chemist in the United States.

Q. Have you also tested or analyzed domestic or potable waters for their sanitary points?

A. I made a very large number of chemical sanitary analyses of waters, quite a number of waters found in the city, I mean waters other than the water that is furnished by the single system from the Missouri River. I have for years past always tested these waters among other constituents for nitrous acid and for nitric acid. Nitric acid is found I think invariably in these waters, nitrous acid often, and in some of these waters here I have found a combined amount of nitrous and nitric acid of from 40 to 60 parts per million parts of such water.

Q. Does your last answer apply to nitrites and nitrates in the waters?

A. The quantitative analyses that I made in such instances would combine both.

Q. Is the presence of nitrites or nitrates in potable waters as such looked upon by the analyst as dangerous?

A. No, not at all.

Cross-Examination

By Mr. Butler:

Q. If you find nitrates in water you are suspicious of the water, aren't you? A. In some of them.

Q. Yes, and condemn water if there be a trace of nitrites that may be associated with germs of some kind?

2485 A. Yes, sir, it was commonly supposed that the nitrites were an indication of germs, and some of these germs might be dangerous to health.

Q. That is the common understanding of medical men, I think, is it?

A. It has been until a few years ago.

Q. And now about the air, doctor, I suppose there are nitrates in the air, nitrites, in the air?

A. Yes, sir.

Q. That varies, some places there are more than others?

A. It does vary some, yes, sir.

Q. Sometimes there is more than others? A. Yes, sir.

Q. It depends upon a great many conditions, weather and so forth? A. Yes.

Q. Now, doctor, I don't understand chemistry very well, and a good many men have been talking to me from the witness stand here, and have confused me some, and I would like to see if you and I understand something just alike. Is NO2—is nitrogen peroxide, is that a poison—poisonous substance?

A. NO2 or N2O4 is certainly poisonous because it is corrosive.

Q. Very corrosive, is it not?

A. Yes, sir; Humphrey Davy who discovered the gas and tested it by taking the fever, was nearly killed by it.

Q. And Sir Humphrey Davy was one of the most eminent ment of your learned profession? A. Yes.

Q. Was almost killed by this very gas which he discovered?

A. He had the gas made in order to verify certain physical factors.

Q. Now it is known, is it not, to all chemists then, to all students and [and] professors, that nitrogen peroxide NO2 or N2O4 is a poisonous dangerous substance?

A. It is a corrosive, yes.

Q. How about nitric acid, is that a poison too, HNO3?

2486 A. In a concentrated form it is corrosive and of course a poison.

Q. Very poisonous, is it not?

A. In concentrated form, yes, sir.

Q. So the degree of toxicity depends upon the concentration at least? A. Upon concentration, yes.

Q. Certainly. Now about the nitrous acid.

A. I would also deem that poisonous when it is concentrated sufficiently to be corrosive.

Q. Yes. Now I understand that if you bring this gas NO2 gas into contact with moisture with water, whether it is in flour, or water tank or wherever it is, it will make nitric-acid and nitrous acid? A. Yes.

Q. In equal chemical or molecular parts? A. Yes, sir.

Q. And the amount that is, will depend upon the gas that is used the amount of gas?

A. On the weight of the gas, yes, sir.

Q. If there is water enough to combine with it?

A. Yes.

Q. Now chemical action is a continuous performance, isn't it? A. Yes, sir.

Q. It keeps going on, and then after there is produced in the flour the nitrous acid and the nitric acid, they go to work in the flour on various bases, don't they?

A. They are presumed to do so.

Q. Well, that would be the natural chemical action?

A. Yes, sir; yes, sir.

Q. And nitric acid when it combines with bases in the flour makes nitrates, do you hear me, nitrates?

A. I have no opinion as to what action the nitric and nitrous acid form from this gas we produce upon the flour or any constituent of the flour.

Q. Well, I know, but take it generally speaking that
2487 nitric acid—I am trying to distinguish between nitrates and nitrites, generally speaking that nitric acid combines with something that is a nitrate, am I right about that?

A. It would have to be in solution, that is to say the nitric and nitrous acid would have to be, for to reach a large number of the particles of the flour.

Q. I was not speaking of flour particularly, but I was generally of nitrate.

A. Oh, yes, yes.

Q. The nitrate is made by the use of nitric acid with a base? A. With a base, yes.

Q. And nitric acid, I am not now speaking of Alsop bleacher? A. Yes, sir, yes.

Q. The nitric acid will combine with flour?

A. Well, I don't know, the chemist usually has a certain definite idea when you use the term "combine".

Q. Well, I will say, act on it?

A. Yes, act on it in proportion to the amount that is present.

Q. And nitrous acid would act on it? A. Yes, sir.

Q. And make nitrites? A. Yes, sir.

Q. Now nitrites are the poisonous group, are they not?

A. I know some persons call them poisonous.

Q. Are you a toxicologist?

A. I claim to be one; I taught toxicology in the University Medical school for eighteen years.

Q. Well, we will not go into any fine citing or definition, but speaking in the common language of the people, they would belong to the poisonous group?

A. In order to answer the question I must give my definition of poison.

Q. Well, all right.

A. A poison is a body which in small quantities will
2488 act deleteriously upon the organism. Now then that demands still an explanation of small quantities and deleterious action. By a small quantity I mean quantities like one grain, and by deleterious action I mean such an action upon one or the other organ of the body that has been more or less clearly defined or described. In this sense, poison in these amounts does not necessarily mean a fatal dose. Now, then, answering your question as to whether nitrous acid is commonly assumed to be a poison?

Q. I mean by the common speech of people generally?

A. Well, it is now a technical question that you ask me, and I must answer it in accordance with my understanding of a poison. I do not consider it a poison.

Q. Yes, sir.

A. Because I do not believe that one grain of nitrous acid in combination if sufficiently dilute will prove deleterious to my organism—organization.

Q. Is it true that some people are killed by doses of poison that would not be fatal to other people?

A. No doubt so,—let me modify—all right, that depends, the killing of the people depends wholly upon accidental circumstances as to the quantity of food taken in the stomach.

Q. Sometimes a very minute dose of a poison may kill a very strong man?

A. Only when the constitution of such person was in some way near the point of dissolution, when a very slight impetus would carry him off.

Q. Sometimes in sickness a very slight impetus might carry off a weak person, a young person or an old person or indeed a middle aged person? A. Yes.

Q. Is that true? A. Yes, sir; yes, sir.

Q. Now you believe, do you not, in wholesome food?

2489 A. Oh yes, I believed in it long before the Department of Agriculture took the matter up.

Q. Yes, you are opposed, are you not, to adulterating foods by the addition of poisons? A. From beginning to end.

Q. Yes, you are opposed are you not to formaldehyd in milk —give me that bill of fare—are you not?

A. Oh yes, because it is a preservative for food, and the food that we take in the stomach is intended to be digested.

Q. And that makes it injurious to health, does it not, because it loads the digestion and makes it harder to digest?

A. My attitude in the matter has been one of prevention, that is to say. I do not want to ascertain in my butter there [—] any amount of formaldehyd, or any conditions more deleterious to my health, nor do I want my friends to try it on their families.

Q. You would think that formaldehyd in any quantity ought to be viewed from the standpoint of health, kept out of food, wouldn't you?

A. I have opposed the use of formaldehyd, especially in the city here, where it was used in times gone by in large quantities in any amount.

Q. Yes, and so that lead chromate on coffee—you know about their fixing up the coffee so it will look better in color, by lead chromate? A. No, I never—

Same objection by claimant.

The Court: He may answer.

To which ruling of the Court claimant then and there duly excepted.

A. But of course, I would not want the smallest part of it in the coffee.

Q. No matter whether you heard of it or not, the most minute part of it in the coffee you think would be against the public health or the welfare of the public, viewed from the standpoint of health, do you not?

2490 A. I am opposed to it, not because I know definitely that it is dangerous to health, but because I don't want to try it on my own body or want my friends to try it on their body nor to find out whether it is or not, don't want to make the experiment.

Q. The rule, therefore, for the safety of health is this, is it not, Dr. Schweitzer, that until it has been shown beyond the slightest doubt that a foreign substance is not injurious when added to food that foreign substance, expecially if a poisonous substance, or poisonous in nature, or capable of poisoning in large amounts, should be prohibited, that is the rule, isn't it?

A. Yes, I held that position even when it is being proven not to be poisonous, I do not want any of these substances in the food.

Q. No, and that is on account of health, food is the most important thing, isn't it, the purity of food, to keep it free from

adulterants and poisons even in the minutest amount, is the most important thing for the preservation of the human family?

A. It is.

Q. Now how about borax in buttermilk.

Same objection by Claimant.

The Court: He may answer.

Q. Should that not be condemned in any quantity?

A. My position has been the position of Dr. Wiley, and that is, I don't want any borax in any of the food that I take, not that I am able to prove that it is deleterious to health, but naturally no food contains it, that means that nature—indicates thereby that we should not put it in.

Q. Yes. Now how about this coal tar dye that they put in it? A. I am wholly opposed to their use.

Same objection by claimant.

Same ruling.

To which ruling of the court claimant then and there duly excepted.

Q. Why?

A. Because no article of food that is produced by nature
2491 that is dyed by dye stuffs like this coal tar dye stuff; if nature had intended to produce food that looked nicely colored, I have no doubt that they would be found. To color them artificially in my judgment is reprehensible.

Q. And also reprehensible if to make artificial coloring a poison is used, is it not?

A. If a substance coming under my definition of poison was to be used I would object to it in any quantity.

Q. Yes. Now, then so over dying or coloring any food substance— A. Even butter.

Q. Even butter, by anything that is poisonous in its nature, you condemn, do you not, as dangerous to public health?

A. I object to coloring any food in any way whether it be a coloring substance that is poisonous or not.

Q. Well, doctor, don't you think that the color of a loaf of bread might be so improved to make it even by a little poison so as to make it more appetizing and therefore make you fatter and make you enjoy more bread because by just touching it up a little of the poison, you would not advise it, but make it so beautiful that it would make you eat more and make you fat?

A. If the substance that has been used for improving the appetising looks of the bread was not poisonous then I would rather think that the article of food looking so appetizing

would stimulate my appetite and produce an amount of secretions enabling me to digest a larger quantity of such food than it otherwise would.

Q. But if the substance used is poisonous by its nature?

A. I would be—

Q. Can't you, of course, take that just right along, say cherry that they fix up, the so-called Maraschino cherry, it looks so much nicer when it is red, don't you think, wouldn't it balance it up so that the color—a little poison in the color, would necessarily off set the attractiveness of the cherry, and so a little poisonous colored matter in the butter will make it a nice creamy yellow, would just offset the attractiveness, so that the attractiveness would be a little greater value than the poison would harm, don't you think that could be done by chemists and toxicologists and druggists and bakers
2492 and butchers and dairymen and all?

Judge Scarritt: We object to the cherries.

A. I have always tried to reach principles that I could apply to these matters, and after I have reached the principle I would not like to deviate from it, that is to say, making a food look more appetizing and nicer, after it has been acted upon [that]it was before seems to me always an objectionable method so I know that in some cases it is done. I have seen the man that sell apples on the stands here and in New York early in the morning get up and rub the apples with a cloth to make it nice and shiny, the apple under these conditions is more appetizing than when it looks dull and perhaps covered with dust; that perhaps would not be objectionable; but the whole method usually leads to dangers, which ought not to be done.

Q. What color in butter do you object to; are there not many nice vegetable artificial colorings that are not poisonous at all that they use for butter?

Same objection by claimant.

A. Personally I rather prefer a yellow butter.

By the Court:

Q. A what?

A. A yellow butter as obtained naturally in the spring of the year and which is called grass butter.

Q. Yes.

A. But eventually the grass passes away and the butter then is artificially colored by the coloring matter that I presume is in no way dangerous to health, personally I prefer such butter; Dr. Wiley objects to that color in butter but it is a matter of personal preference.

Q. Well, I understood you to say that you object to artificial coloring in butter; did I understand you wrong?

A. In a general way, but I say personally I prefer said butter to a colorless butter.

Q. Oh yes, to a colorless butter, but the coloring matter of butter is not poisonous at all?

2493 A. No, sir.

Q. Purely harmless?

A. That is to say if the coloring matter is natural.

Q. Yes, I understand, I mean such as are only used; I didn't understand that that was a poison. Now I wanted to ask you about saccharin in canned peaches, for example; what do you think of saccharine?

Counsel for claimant objected for same reason; the court overruled the objection; to which ruling of the court claimant then and there duly excepted.

A. That is a substance that has an unnaturally sweet taste.

Q. It is the sweetest thing known? A. How.

Q. It has more sweetness of taste than any other article?

A. Yes, sir, it is about a hundred times as sweet as sugar, but there is no measure by which I can measure it, but saccharin is not a substance that our organism can use, that is to say, it passes out of the organism unused; the sugar that we take is vital and we get the benefit of it, and to use saccharin in any amount and in any food in order to make that food appear like being sweet, I look upon as a crime that ought to be punished.

Q. Yes, because it is dangerous to health, isn't it?

A. Not dangerous to health but because it is a fraud.

Q. A fraud, you think a fraud makes it appear like something that it is not?

A. Preserved fruits or vegetables that are sweet, they naturally suppose that that sweetness is produced by sugar.

Same objection by claimant; the court overruled the objection; to which ruling of the court claimant then and there duly excepted.

Q. That is they make the thing appear like something that it is not? A. Yes, sir.

2494 Q. And you think that ought to be punished as a crime? [—] Putting false appearances in food.

Q. How about fluorin to preserve sweet cider or make it look better, which is it used for, to preserve or make it look better, do you know?

A. I don't know, we must in our food take quantities of fluorids, in our natural food, because the animal and the vegetable contain fluorid, it can therefore not be said that small

quantities of fluorids in themselves could be detrimental to health, but the addition to the food of more fluorid than it would naturally contain without stating so on the label under which that food is put in the market, I look upon as reprehensible.

Q. Yes, that is notwithstanding the system requires some fluorin still you condemn the addition of fluoride to foods unless they label fluorids added? A. Exactly.

Q. So that people may know. A. Oh yes, yes.

Q. What they are putting into them, you believe in that, don't you?

A. Exactly. My position in reference to pure food from the beginning has been that I will concede to any man to sell any food, whether it is poisonous or not, only he has to label it in case it is poisonous poison; then each person is advised, he will buy it on his own responsibility.

Q. That is if food have poison added to it, you think the thing ought to be labeled, "poison"? A. Poison, poison.

Q. And if they want to eat, let them eat it, is that it?

A. Certainly if you then buy it with poison on it, you can not lay the blame on any one else [by] yourself.

Q. That is right, in other words, you believe in telling the truth on labels? A. Telling the truth on labels.

2495 Q. Are you familiar with this strawberry jam that is made out of timothy seed, dioxid of soda and coal tar dye?

Counsel for claimant objected for the same reason; the court overruled the objection; to which ruling of the court claimant then and there duly excepted.

A. I have made investigations in Washington, and I confess I never bought any to eat them, only those that were put up in my own household by my wife from fruit that she bought in the market.

Q. Well, has it come to your knowledge that some of the strawberry jam on the market contained not strawberry, but timothy seed, to simulate the appearance of the strawberry seed, dioxid of soda or sodium [benoate] which is the same thing, and coal tar dye; has that come to your knowledge?

Same objection by claimant; objection overruled; to which ruling of the court claimant then and there duly excepted.

A. Yes, the publications of the Department at Washington state so, and I assume that to be true.

Q. Now what do you say as to the injuriousness to health of strawberry jams made out of timothy seed, dioxid of soda and coal tar dye?

Same objection; objection overruled; to which ruling of the court claimant then and there duly excepted.

A. I have personally never eaten any.
Q. I know but as a scientist and toxicologist would you know—I will not bother you about it.
A. I would say, my advice would be to every person not to buy or eat this jam.
Q. Yes. Now about French peas, you are familiar with the article sold in the market as French peas, and served at the restaurant? A. Yes.
2496 Q. Nice and as green as when you pick it?
A. Beautiful green color.

Counsel for claimant objects to the question for the same reasons.

The Court: He may answer.

To which ruling claimant then and there duly excepted.

Judge Scarritt: As I understand, he is a great friend of Dr. Wiley, and he approved of green peas.

Mr. Butler: Who told you that?

Judge Scarritt: I read it in some bulletin here.

Q. Well, I was trying to find out what Dr. Schweitzer thinks. Now are you familiar with the use of copper sulphate to make the peas look green, has that come to your knowledge?
A. I tested many instances peas that looked beautifully green, for copper, sometimes I found a small amount of it; which of course, must have been artificially added to it.
Q. What do you think of copper added to peas, it is some salt of copper, of course, was not metallic copper was it?
A. I look upon such peas, in the first instance as fraud upon the people; in the second instance if a sufficient quantity of copper has been added, as detrimental to health.
Q. Because poisonous, these copper salts are poisonous, aren't they? A. In sufficient amounts, yes, sir.
Q. They make paris green out of it and arsenic?
A. Paris green contains something else than the copper that is more poisonous.
Q. That contains arsenic too, paris green, doesn't it?
A. Yes, sir.
Q. Now what effect upon health has borax and coal tar dye in cheese?

Same objection; objection overruled; to which ruling of the court claimant then and there duly excepted.

2497 A. I couldn't tell. [Now] such case has come under my observation.

Q. Has it come within your knowledge that they have used borax in cheese and also coal tar dye?

A. Oh, it is my knowledge that it has been used.

Same objection.

Q. Now assuming that borax and coal tar dye to have been used in cheese would you think that a good thing or a bad thing from the standpoint of health?

Same objection.

The Court: He may answer.

To which ruling claimant then and there duly excepted.

A. If it is used in order to give that article of food an appearance better than it had, I would stamp it as a fraud; whether in the amounts used it would be proven dangerous to health, that would depend upon the individual case in which the amount of it had been ascertained.

Q. I received the impression from you that you condemned the addition of borax in any amount? A. In any amount.

Q. To any food? A. To any food.

Q. You don't believe borax is a good thing for a food or for the health do you?

A. Only for washing purposes, there it is first rate.

Q. I mean to eat?

A. Eat no, so far as I know no article of food, grain or any that has ever been used by man, contains naturally borax, and if a food does not contain any of these articles I have taken it to be an indication by nature that it is not needed.

Q. Yes. Now, have you in mind, I want to ask about the quantity of nitrites in the air? A. Yes.

Q. In what form is it in the air, ammonium nitrite probably or is it in the form of NO2 or NO2 in solution, or nitrous acid, or what form do you think it is in the air, doctor?

A. May I explain how these nitrites in nature are

2498 formed?

Q. Well, I understand, I think that has been explained pretty well, it is by the flash of lightning or decaying vegetation? A. Oh, there are some other conditions too.

Q. Well, very good, if it is not too long?

A. No, in a few minutes. Salt oxids will produce nitrites and nitrates, if you light a lamp let it burn, if you take a glass tube and blow through the side and get the gas in a large beaker glass moist, you obtain an amount of fluid in there sufficient to make the test for nitrous acid; that water either evaporates when you boil it away, or when it evaporates naturally.

For example, if you spread pieces of linen or cotton on the grass, moistened to bleach them, then when this water evaporates a certain amount of nitrites are formed which either pass into the atmospheric air or a certain amount remain with this fabric, so when you water it again, and then wring it out, you get a fluid that will show nitrous acid. Now then that means that the nitrous acid is formed in these places where there is air and part of it passes into the air, if the air contains ammonium as it always does, then of course, this nitrous acid will become nitrite of ammonium but whether the whole of the nitrous acid is converted into nitrite of ammonium or not I couldn't tell.

Q. A good deal of it you would think?

A. Most of it I imagine.

Q. Now of course, the Alsop bleacher, the flaming arc, would also keep adding to the air?

A. The flaming arc acts differently from any of these processes, the flaming arc produces this gas.

Q. And that would add nitrous acid to the air?

A. Nitrous acid as well as nitric acid by other processes into nitrous acid.

Q. Now assume that a five horse power generator in the Berkeland-Eyde—you know about that method of making nitric acid? A. I know in a general way.

Q. They make it commercially by the hundreds of thousands of tons?

2499 [A]. Five horse power of that in the air, take the horse power; I am told the voltage is immaterial; they say by five horse power they will in the air produce through the flaming arc, the manufacture of NO2 and then NO2 and HNO2 and HNO3, I suppose that is the way it goes, 7,000 pounds of nitric acid. Now assume that in a little flour mill, manufacturing 100 or 200 barrels a day, that they produce gas enough to make 7,000 pounds of nitric acid in the air in a year's work, do you not think that they would contaminate the air and the food and the flour very seriously?

Counsel for claimant objected as not based on the evidence.

The Court: He may answer.

To which ruling of the court claimant then and there duly excepted.

A. It would depend upon the amount of food on which it was to act.

Q. I say a hundred barrels of flour?

A. It means 20,000 pounds if the barrel contains 200 pounds.

Q. Yes, that is right, yes. And a hundred?

[Q]. Well it would be as I figure it out, it would be about that much solid nitric acid in a barrel of flour, from my finger down, something like that (indicating) that would be pretty near the amount, wouldn't it?

A. As to the quantity I have no knowledge, and I have to take your value.

Q. Well, that is what I ask you to take my word?

A. I would say that such an amount of nitric acid if it was to be turned into the flour—

Q. Yes. A. To that extent would be objectionable.

Q. Yes, or if it was spread in in the finest way?

A. Well, in any way.

Q. So that if this bleaching adds nitrous acid or nitric acid or both in any such quantities as that, or any quantities
2500 comparable to that, you would say it would be a bad thing? A. Oh, it would be very bad.

Q. Yes, bad for the health do you think too?

A. Certainly but I have been made to believe that 1.8 parts of it is to the million parts of flour.

Q. Yes, I understand, but I am asking you, you understand—

A. It is injurious to health in that amount.

Q. You understand, Mr. Schweitzer when I ask you to assume anything you are not responsible for the assumption; all you are responsible for is you opinion. I beg pardon, Professor, I have misspoken your name. I will ask that it be changed, that was wholly unconscious, because somebody mentioned Prof. Keyser who was here, I believe, he also lives in the State.

The Court: He lives in St. Louis, Mr. Keyser does, but has not been called.

Q. Are you an organic chemist, that seems like a very hard thing to understand?

A. I do not profess to be a specialist in organic chemistry.

Q. Do you know this, without going into the fine details or matters of quantity, whether or not nitrous acid will produce the nitroso compounds in flour? A. I think so.

Q. Yes.

A. That is the commonly accepted term of what a nitroso compound is.

Q. And these nitroso compounds are among the most poisonous of the organic poisons, are they not?

A. I don't know whether they are all belong to that category.

Q. Well, I mean are some of the nitroso compounds then, I want it just as you would have it Prof. Schweitzer?

A. Well, I presume so.

Q. Now will the nitric acid produce nitro compounds in flour, appropriate quantities for that purpose being used to get the action?

A. If that means whether the nitric acid, even by a change into some other compound, will act upon flour, I would say, yes.

2501 Q. Did you ever measure the nitrites in the air here in Kansas City? A. In the air.

Q. Yes?

A. No, I never did here.

Q. Do you know whether any determination has ever been made here?

A. Not that I know of; my examination of the air dates back very nearly to 40 years ago and to 35 years ago.

At this point the further hearing of this cause was adjourned until 2 o'clock p. m.

Pursuant to adjournment, court met at two o'clock p. m., Friday, July 1, 1910, and proceeded with the trial of said cause further as follows:

Professor Schweitzer, resuming the stand, was cross-examined further by Mr. Butler, and testified as follows:

Q. Professor, when a person breathes in the atmosphere in which there is a small amount of nitrite reacting material, or whatever name it may be known, that the air usually contains, is it true that all, every bit of the nitrous acid or nitric acid, or nitrite reacting material is absorbed?

A. Probably not.

Q. It would be very difficult, would it not, to make any estimate on that, because even the air that we blow out, after it comes into the lungs, still has some oxygen?

2502 A. I never, myself, made the tests, but of course it would have to be decided by actual tests made with exhaled air.

Q. Now, Professor, do you know of the substance called the xanthoproteid, or the chemical reaction, called the xanthoproteic reaction? Do you know about that?

A. No, I do not recollect it, now.

Q. That is the yellow reaction on proteids? A. Yes.

Q. Which results from—

A. (Interrupting) Yes, I know. I judge so, from the name.

Q. The "xantho" means yellow, I guess. A. Yes.

Q. Do you happen to know whether that is an injurious substance,—a deleterious substance?

A. I do not.

Q. Do you know whether, when eaten, it will be digested totally?

A. If it is introduced into the stomach, I have no doubt that the organ will take care of it. Whether it is digested or not, I cannot tell.

Q. Will it not produce nitro peptones, and some other things which will be combined, and which are very, very poisonous?

A. I don't know whether it produces them.

Q. Do you know about nitro peptones?

A. I know all about peptones, but I don't know about nitro peptones.

Q. And nitro albumoses?

A. No. Peptones, and proteins, I know something about, but about nitro compounds, I do not.

Q. You would expect, would you not, that the nitro [albusoses] and the nitro peptones would be very poisonous?

A. I don't know. I would prefer not to have them in my stomach.

Q. And you would expect that, from the flour that was so treated with nitric acid as to produce these xanthoproteins, that, in digestion, this nitro albumose, and the nitro peptones would be produced, wouldn't you?

2503 A. If there had been enough nitric acid, or enough nitrous acid present to produce a sufficient amount of these bodies.

Q. That is what I mean.

A. I would think that they might prove indigestible, or harmful.

Q. That is the product? A. Yes.

Q. The stuff itself might be poisonous or harmful? The stuff itself might be harmful, or the product of the digestion might be harmful? Is that the way it might be?

A. I would consider them objectionable, and perhaps harmful, but I would not care to explain on what grounds.

Q. I did not intend to ask you that question, Professor. Now, you made some calculations on an assumption that Mr. Elliott gave you? A. As to this flour?

Q. As to this flour that was seized. Your calculation was based on the assumption of 1.8 parts nitrous acid?

A. Nitrous acid material per million parts of flour, yes.

Q. Now, if there was 1.8 of nitrous acid, computed as nitrogen your results would be 3.3 times greater, wouldn't they?

A. No, it would be less. Nitrous acid has a greater weight than nitrogen.

Q. Yes, I know, but the evidence in this case shows that, computed as nitrogen, it is 1.8 nitrogen? A. Oh, yes.

Q. So, your results would be three times more, on that basis, would they not?

A. Yes, they would be in the proportion of fourteen to forty-seven.

Q. Forty-six? A. Yes, forty-six.

Q. So, that would be about three times—three and one-third? A. Yes.

Q. That is near enough for our purposes? A. Yes.

Q. Now, you gave us a definition of a poison. There have been a good many who tried that, have there not?

2504 A. Yes, I know.

Q. And the scientists have never agreed on the same terms, exactly, to define a poison, have they?

A. I considered the matter over forty years ago, and I have considered it ever since, and my definition of a poison is this—

Q. (Interrupting) Well, I have that in mind. You gave me that. I did not intend to ask you for that. What I did intend to ask you was this, Professor, that, different men, different professors, have somewhat different definitions?

A. Yes, certainly, because it is a matter of one's individual judgment, based on one's individual experience and knowledge.

Q. You know Professor Haines, who was here yesterday?

A. I have met him, yes.

Q. Do you know his definition, as published in a text book of legal medicine and toxicology?

A. No, I do not know. I do not know his book.

Q. You have known him for some time—known his reputation? A. I have known of him for some time.

Q. Personally, not until you met him here?

A. I met him lately.

Q. What do you think of this, for a definition of a poison—

Mr. Scarritt: (Interrupting) We object to that, if your Honor please, as not material. The Professor was here on the stand, and he could have been asked the question.

Mr. Butler: But you would have objected that it was not cross-examination, because you had not asked him to define a poison.

The Court: He may answer. The question may be propounded.

Mr. Scarritt: And we object for the further reason that the witness says he doesn't know anything about the work.

The Court: It is not material whether the question
2505 is read from the book, or stated from memory, or propounded as an original question.

Mr. Scarritt: We except.

Mr. Butler: This is Volume 2, Page 300 and 301.

Q. (Reading) "We may say, perhaps, in a general way, that, in the every-day affairs of life, a substance, to be regarded as poisonous, must be capable of inducing harmful results, if administered in doses of about sixty grains, if a solid, or a teaspoonful, if a liquid. This limitation, although somewhat arbitrary, is often of great convenience in the common use of the word poison, and in the discussion of the subject in medico-legal cases. In order to avoid any uncertainty as to the inclusion of corrosives, and the mechanical irritants, the statutes commonly speak of the administration of poison, or of other noxious or destructive thing, or use words to the same effect. Legal quibbling, in regard to definitions, is thus eliminated, or reduced to a minimum." Now, Doctor, is that not a very fair definition of a poisonous substance?

A. No doubt was so, to Dr. Haines.

Q. And might be so to many other scientists of great renown? A. Yes, might be to a great many others.

Q. So that the term, as talked about in definitions, is relative, and elastic, because the scientists have never agreed as yet, as to what a poison is? Is that right?

A. Yes. There is no definite unit of measurement.

Q. Well, now, within that definition, would sixty grains of nitrite be poisonous in character. I do not mean necessarily fatal, but would it be poisonous in character, in your judgment?

A. According to my definition—

Q. (Interrupting) I did not mean according to yours.

A. Oh, according to Dr. Haines' definition, that would be poisonous, and Dr. Haines would pronounce it so.

Q. So, according to the definition, which I have given you in this question, nitrite would be poisonous, because, if
2506 solid, sixty grains would be harmful, or, if liquid, a teaspoonful would be harmful, to some extent, at any rate, would it not?

A. Well, a teaspoonful means the solution?

Q. Yes, and the grains mean a solid, I think.

A. Yes. But a solution does not indicate the strength. That means to say, a teaspoonful of arsenic may contain ten grains of—

Q. (Interrupting) Let us assume it is concentrated, though. Then, it would be clearly poisonous, wouldn't it, within Dr. Haines' definition?

A. Yes. Scientifically, it is not an exact definition.

Q. And scientifically, it is very bad to give a very exact definition of a poison, is it?

A. It cannot be given, scientifically, because there is no unit of measurement.

Q. And, by unit of measurement, you mean you do not know how, yet, to measure the effect?

A. The same thing that is universally accepted, as the kind of measurement by which to measure things.

Q. Now, Professor, it is pretty hard, is it not, to measure the effect of food, or drink upon a human being? You take a glass of water, or of beer, or of whiskey, or a large meal. There is no known unit of measurement to ascertain the effect upon the system? A. No.

Q. And so it is with other substances, like drugs,—especially drugs? Is that [no] so? A. Yes, yes, that is true.

Q. Even if all individuals were alike, measurement could not be made, could it, because you do not know how?

A. We have no unit of measurement, just as we have no unit of measurement for sweetness.

Q. Or for sound? [Q]. Or for soundness.

Q. Or noise, or sound? A. Yes.

Q. There is no unit of measurement?

A. That, perhaps, might be brought within the range of our understanding by the vibration.

2507 Q. Yes, in another way. That is probable, but it is also true, is it not, Professor, that there is the greatest variability among persons as to the effect of drugs or poisons, or drinks, or food?

A. Yes. The toleration of any drug, or any poison, is different in different individuals.

Q. Power of resistance, too?

A. That is what we understand by toleration.

Q. As you use toleration, you mean the power of resistance?

A. Yes, I meant ability to remove from the body these substances, and by overcoming the evil effect.

Q. Do you not think that it is true, Professor, that adulterated foods—that is, foods adulterated by adding substances which may be poisonous in quantity, may be injurious to health, even though you cannot observe any symptom or effect upon the people when they use the foods, or shortly thereafter?

A. Yes. If there is one, single administration, there may be absolutely no visible effect, and yet, it might prove deleterious to health.

Q. And so, in case of the consumption, in varying quantities, at different times, of different foods, adulterated by different poisons, the health may be broken down, and life destroyed, without any one, even the most skilled physician, being able to select the cause, or combination of causes, in the adulterated foods which brought on the collapse? Isn't that true? A. I don't think that I could concede it.

Q. That is to say, when a man breaks down in middle life, we will say?

A. When a man breaks down, without apparent cause, and where, in the food that he takes and in the conditions under which he lives, there is not detectable any deleterious influence, then we would assume that the general break-down is caused by natural internal causes.

2508 Q. Yes, but is it not true, Doctor, that death comes at all ages, from babyhood to old age, and the most skilled doctors cannot tell what were the causes of death, whether it was hereditary frailty, frailty resulting from excesses, frailty resulting from bad ventilation, frailty resulting from bad food, or insufficient food, or adulterated food. These things may all combine to destroy health or life, and the greatest scientists cannot discover the causes, or, if they discover any cause, cannot measure its effect, or the effect of other causes which contributed to the disaster? Is that not true?

A. I think that the doctor who gives the death certificate always gives a cause of death.

Q. Are you a doctor?

A. No, I am not a physician.

Q. Do you think they always know? A. No, I do not.

Q. That is, they can tell whether it was a contagious disease, or death by violence, or the like?

A. Yes, sir. They can tell what is plainly visible.

Q. And if they don't know anything else?

A. They find a cause for it.

Q. If they do not know anything else, they may call it heart failure? A. Yes, certainly.

Q. And, if our hair has grown gray, they may say it is old age? Is that not true?

A. Yes. The ways of the doctors seem strange to me.

Q. Some of their ways are mysterious to me, but do not many of them write down on their death certificates, "Cause of death unknown"?

A. Only those doctors do that, who know a great deal. Those who know very little never fear to put down the cause.

2509 Redirect Examination

By Mr. Elliott:

Q. Professor, the amount of nitric acid which Mr. Butler indicated to you in one of his questions, I think was six ounces.

A. I estimated the quantity as he held it, there, to be about six ounces of the liquid acid. Not as gas, but as a liquid acid.

Q. How many grains would that amount to?

A. That would mean something like twenty-three hundred grains.

Q. In a barrel of flour?

A. Twenty-three hundred grains in the barrel of flour.

Q. Now, assuming that, with this flour containing 1.8 parts, calculated as nitrogen, or nitrite reacting material, there was nitric acid, how many grains of nitric acid would there be in a barrel of flour?

A. Taking a barrel of flour, weighing about two hundred pounds, it would be two hundred twice, multiplied by one-eighth of a grain or, since my calculations were based on 1.8 parts of nitrous acid to the million, while it is 1.8 parts of nitrogen, it would be probably in the proportion of two and one-half to three. I would say that such a barrel of flour would contain about three grains of nitrous acid.

Q. That is, three, as against twenty-three hundred and thirty-three? A. Yes.

Q. You have stated to Mr. Butler, why you opposed the addition of certain substances to food. Please explain to the jury why you think the nitrite reacting material in bread from bleached flour is harmless.

Objected to as improper redirect examination.

Objection overruled.

Q. Have you got the question in mind? A. No.

Q. You stated to Mr. Butler why you opposed the addi-
2510 tion of certain poisons to food. Please explain to the jury why you think the nitrite reacting material in bread from bleached flour is harmless? A. Not poisonous?

By the Court:

Q. Harmless.

A. Harmless? In the statements made this morning, I explained that we inhaled, through the atmospheric air—

Mr. Butler: (Interrupting) Now, this, Your Honor, is repetition, and he starts out with "As I told you once before."

By the Court:

Q. Just briefly state it, and let us get through with it.

A. Since we take, in twenty-four hours, into our systems, through the air, one-tenth of a grain of nitrous acid material, I cannot conceive that any amount of nitrous acid that we take in twenty-four hours into our systems in any way can be poisonous, and, since a loaf of bread contains only one-one hundred and twentieth of a grain, which is twelve times less than we take into the system naturally through the air, could, by no possibility be called harmful.

Recross Examination

By Mr. Butler:

Q. How much nitrous acid would you like to have put in the atmosphere of the room that you have to stay in all the time?

Mr. Scarritt: We object to that as irrelevant and immaterial, and not proper recross-examination.

A. When I first knew that nitrous acid was in the atmosphere why I and other chemists looked upon it with a great deal of interest.

Mr. Butler: I move to strike that out.

2511 The Court: Let him answer.

A. (Continuing) My own experience is as to the amount that is actually in air.

By Mr. Butler:

Q. Well, if you doubled that amount, would it still be safe, in air? A. I don't believe that it will affect me in any way.

Q. If you multiply it by ten? A. I don't believe so.

Q. One hundred?

A. I would not care to give an opinion as to that.

Q. Fifty?

A. I would not. Since you fixed upon ten, I will take ten.

Q. You think you would live in that? A. All the time.

Q. How long do you think you could live in it?

A. I have lived in it about seventy years. I don't know how much longer I could live in the other air.

Q. Do you think it would be a good thing, in a school room, to have an Alsop bleacher pumping NO2 gas into the air?

A. Much greater danger in the school room, is carbonic acid.

Q. Would you like to have, for health, the nitric acid generator in a school room, freeing it in the air?

A. If I was a rich man, I would prefer to have all the air that comes into the room washed.

Q. And have the nitrites taken out?

A. Everything taken out.

Witness Excused.

2512 Mr. Scarritt: That is our case, except that Dr. Webster was to furnish an authority that Mr. Butler asked about.

The Court: Let him indicate the page.

The Witness, Webster: I stated, in my answer, it was in—

The Court: (Interrupting) State the page.

The Witness, Webster: This is not the book. I could not find the book, in that reference. I have found a reference, here, from Page 830—

Mr. Butler: (Interrupting) Wait a moment. We object to him bringing in any other book.

The Witness, Webster: And this is the reference here, that I had in mind.

Mr. Butler: We object to him bringing in some other book.

The Court: Now, you were asked by counsel to produce a certain reference. Do you say you can or cannot produce it?

The Witness, Webster: I said I thought it was in another book.

The Court: Wasn't it there?

The Witness, Webster: I did not find it there. I found a reference in—

The Court (Interrupting): Never mind. Have you any other witnesses?

Mr. Scarritt: No. We rest.

The Court: Claimant rests.

2513 Thereupon the libelant, in order to maintain the issues on its part, introduced the following evidence in rebuttal:

Frank W. Liepsner, called as a witness on behalf of the Government, being first duly sworn, was examined, and testified as follows:

Direct Examination

By Mr. Butler:

Q. Your name and address, please?

A. Frank W. Liepsner, Washington, D. C.

Q. Were you raised here in Kansas City?

A. I was raised, from the time I was 5 years old, in Kansas City.

Q. And you are connected with some of the scientific departments of the Department of Agriculture?

A. I am assistant chemist, bureau of chemistry.

Q. You are a chemist, are you? A. Yes, sir; a chemist.

Q. Now, since this law-suit commenced, have you examined the substance, that looks brownish in color, and looks something like iron rust, for nitrites, in Government's exhibits 14, 15, 16 and 17, and claimants exhibits 225, 240, 242, 246, and 273? The latter is the water pipe. The others are the gas pipes used to conduct gas in these mills between the electrifier and the mid-way tank, or the agitator, as the case may be, being the pipes through which the bleaching gas passed?

Claimants object to any evidence as to the Government's exhibits, as not being proper rebuttal.

Objection sustained.

Q. Tell us about the claimants' exhibits—whether you examined them for nitrates? A. I have examined those.

Q. What did you find?

A. Shall I give each one in detail?

2514 Q. Yes.

A. I found, in claimant's exhibit 225, a very heavy test for nitrates. In claimants exhibit 240, a strong test for nitrates. In claimant's exhibit 242, a good test for nitrates. In claimant's exhibit 246, a very heavy test for nitrates. In claimant's exhibit 273, I obtained no test, whatever.

Q. For nitrates? A. For nitrates.

The Court: What was the last one?

The Witness: That is the water pipe. 273.

The Court: No nitrates there?

The Witness: No nitrates were found there.

By Mr. Butler:

Q. Did you examine the same exhibits for nitrites?

A. I did.

Q. That is, the scrapings from them? A. Yes.

Q. You may give the result?

A. 225, I obtained a heavy test for nitrites. Claimant's exhibits 240 and 242, I obtained a fair test in each, and claimant's exhibit 246, I obtained a heavy test for nitrites, and claimant's exhibit 273, I was able to obtain no test.

The Court: What one was that?

The Witness: The water pipe, again.

By Mr. Butler:

Q. Did you examine for water soluble nitrite reacting material, claimant's exhibits 246 and 225? A. I did.

Q. What did you find?

A. In claimant's exhibit 246, I obtained a very heavy test for nitrites on the water soluble material, and from the

2515 scrapings on claimant's exhibit 225, I obtained a heavy test for nitrites from the water soluble material.

Q. Did you examine exhibit 273, the water pipe, for water soluble nitrite reacting material?

A. I examined this in the same way, and obtained no test for nitrites in the water soluble material.

Q. Did you examine Gov. Ex. 18, for the water soluble nitrite reacting material? A. I did.

Q. Have you now mentioned all of the exhibits,—the scrapings from which you examined for water soluble nitrite reacting material? A. That is all I examined; yes, sir.

Q. What was the result in Gov. Ex. 18?

A. On Gov. Ex. 18, I obtained a heavy test for nitrites in the water soluble material.

Q. Did you heat the scrapings from any of the claimant's exhibits, to ascertain whether or not nitrogen peroxide gas would be given off by applying heat to such scrapings?

A. I heated the scrapings from claimant's exhibits 225, 246 and 273.

Q. What was the result in 225 and 246?

A. In Nos. 225 and 246, by heating in a test tube, I obtained heavy fumes of nitrogen peroxide gas,—the heavy, red gas.

Q. Did you heat the scrapings from the water pipe, Ex. 273? A. I did.

Q. Did you obtain any fumes of the nitrogen peroxide gas, or any nitrogen peroxide gas?

A. I obtained no colored fumes, and could get no odor of nitrogen peroxide.

Q. And you also examined Gov. Ex. 18, the scrapings from that, in the same way, by heating? A. Yes, sir.

2516 Mr. Butler: Is there any objection to that result.

Mr. Scarritt: Yes. No use going into this.

Mr. Butler: Well, I agree to that.

Q. Now, did you heat scrapings from any other pipes or exhibits, except 225, 246, Gov. Ex. 18 and claimant's Ex. 273?

A. Those are the only ones that I tried by that test.

Q. Since this trial commenced, have you determined the nitrite reacting material, or nitrous acid, or whatever it may be, that is in the atmosphere, here at Kansas City?

Mr. Scarritt: We object to that as not rebuttal.

The Court: He may answer that.

Mr. Scarritt: We save an exception.

A. I have.

By Mr. Butler:

Q. Whereabouts in Kansas City?

A. At my home, or rather, my father's home, 4138 Locust Street.

Q. What kind of a day was it, or did you examine on two different occasions?

A. I examined and made two different runs for nitrite reacting material.

Q. In the first run, as you call it, what kind of weather was it?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. The first run was completed during clear weather.
Q. What did you obtain, in parts per billion?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

Q. Nitrite reacting material.
A. I obtained .28 nitrite nitrogen, or nitrite reacting nitrogen, per billion.
2517 Q. That is a little more than one-fourth of one part per billion, calculated in terms of nitrogen?
A. A little more than one-fourth part per billion, calculated as nitrogen.
Q. Now, you made a second run?
A. I made a second run.
Q. What was the weather, during that run?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. The weather, during that run, was partly cloudy.

The Court: What time—in the day?

The Witness: It extended over two days. It was cloudy weather and during one of the nights there was a fierce thunder storm, and a slight amount of rain. On that test, I obtained 1.09 parts per billion of nitrite nitrogen.

By Mr. Butler:
Q. Practically four times as much as you obtained on the first run?
A. Very nearly four times.
Q. Now, have you, heretofore, this year, examined the air at the City of Washington, to ascertain the same thing that you ascertained here in Kansas City, during this trial?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. I have.

By Mr. Butler:
Q. And where, in Washington?

A. At the bureau of chemistry building, at 216 13th Street, Washington.

Q. Is that down town?

A. That is in the main,—well, it is down town, yes, sir.

Q. In what section?

A. Southwest section of the city.

2518 Q. Very nearly where the agricultural building is?

A. Just a block of the agricultural building.

Q. Within a block of the Secretary's office?

A. Just about a block of the Secretary's office.

The Court: Not very far from the Washington monument?

The Witness: Probably two blocks from the Washington monument.

By Mr. Butler:

Q. That was April 15 and 16, 1910?

A. Yes, sir.

Q. What did you find?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. I found 1.22 parts nitrite nitrogen per billion parts of air.

Q. About the same as the second run at Kansas City, which included the thunderstorm? A. Yes.

A. Juror: How is your place, at Locust Street? Are you down on Harris' branch, or low ground?

A. I am not familiar with the country out there, very much.

Mr. Butler: The number is 4138.

The Juror: But I want to know whether it was down in the low-ground, there, right close to the creek, or up on the side of a hill.

The Witness: It is rather well up, overlooking the boulevard, there. I don't know the name of the creek. There is a creek down below us, there.

Cross-Examination

By Mr. Scarritt:

Q. What do you mean by "good", "slight", and "heavy",

2519 in making these tests?

A. These were merely qualitative tests.

Q. Just qualitative tests?

A. Qualitative tests; yes, sir.

Q. Where did you get these filings? Did you take them from the pipes, yourself?
A. I took them from the pipes, myself.
Q. Where did you get the pipes?
A. Picked them up off the flour.
Q. Here? A. Yes, sir.
Q. And you took the filings? A. Yes, sir; I did.
Q. How did you get them out?
A. Took a spatula and just scraped from the pipe, over a piece of paper, and allowed them to fall.
Q. How long did you keep them?
A. Before I tested them?
Q. Yes.
A. Just as quick as I could carry them from here upstairs,—probably five to ten minutes.
Q. And you tested them in the laboratory up here?
A. Immediately after I took them.
Q. They were not the filing that were made at the time the exhibits were tendered, here?
A. No, sir.
Q. You took them out, yourself, and made these tests, and they are qualitative tests? A. They are.

By Mr. Butler:
Q. Doctor Shephard was present with you, and took part in the tests?
A. He stood beside me while I was conducting the tests; yes, sir.

2520 Witness excused.

A. S. Acree, being recalled, was examined, and testified as follows:

Direct Examination

By Mr. Butler:
Q. Since Doctor John A. Wesner testified, have you tested oil extracted from flour, treated with nitrogen peroxide gas, to ascertain whether or not it would give the Griess test?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. I have.
Q. Will oil, extracted from flour treated by nitrogen peroxide gas, give the Griess test?

Objected to as not proper rebuttal.

Overruled.

A. It will not.
Q. Since Doctor Wesner testified, did you ascertain whether phenol, subjected to the bleaching reagent, NO2, would give the Griess test?

Objected to as not proper rebuttal.

Overruled.

A. I tested the nitroso phenol.
Q. What did you find.

Same objection.

A. It gives no Griess test. I have the exhibits here, if you wish to see them.

Mr. Scarritt: We move to strike that out.

The Court: Oh, let us get along, gentlemen.

By Mr. Butler:
Q. Have you the exhibits here?

Objected to as not proper rebuttal.

Overruled.

2521 Claimants except.

Mr. Butler: I will withdraw that question for the moment.

Q. Did you make experiment, to ascertain whether or not terpentin, or terpene, treated with the NO2 gas, would give the Griess test?

Same objection.

Overruled.

A. I have.
Q. Will it?

Same objection.

A. Only faintly.
Q. Now, have you exhibits here, in pairs, related to the test of the oil, of the phenol, and the terpentin?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. I have.
Q. Let us see those relating to the oil.

Same objection.

Overruled.

Claimants except.

(Witness produces exhibits requested.)

Q. What is exhibit 57, and what is exhibit 58?

Same objection.

Overruled.

Claimants except.

A. Exhibit 57 is the Griess test applied to 10 grams of the fat, which was treated with 2 cubic centimeters of nitrogen peroxide. No. 58 is the Griess test applied to sodium nitrite containing the same amount of nitrogen, nitrogen equivalent to the nitrogen in the fat.

Claimants move to strike out the answer, not being proper rebuttal.

Overruled.

Claimants except.

Q. Have you the exhibits relating to the nitroso phenol.
A. I have.
Q. Let me have them.
A. (Witness produces exhibits.)
Q. What is exhibit 59 and exhibit 60?

2522 Same objection.

Objection overruled.

Claimant excepts.

A. Exhibit 59 is the Griess test, applied to nitroso phenol containing the same amount of nitrogen as in Exhibit 58. This stood one week, and has never developed any color more than the color you see there. No. 60 is the Griess test applied to exactly the same amount of nitroso phenol. This test has stood perhaps 1 hour.

Claimants move to strike out the answer, not proper rebuttal.

Motion overruled.

Claimants except.

Q. Have you the exhibits relating to the terpene, or terpentin? A. I have.
Q. Only one? A. One.

Q. Explain what exhibit 61 is?
A. Exhibit 61 is the Griess test applied to terpentin, containing the same amount of nitrogen equivalent to the others that I have spoken of, here.
Q. Gives no reaction, you say?
A. At most, very faint.

Claimants move to strike out the answer, not proper rebuttal.

Overruled.

Claimants except.

A Juror: Where did you get your terpentin?

The Witness: It was bought in the market.

By Mr. Butler:
Q. Whereabouts, do you know? Who bought it?
A. At one of the drug-stores. The young man in the laboratory bought it in a sealed, unopened package, from the drug-store. It was purified terpentine.
Q. What do you mean by an unopened, sealed package?
A. It was unopened.

2523 Mr. Scarritt: We move to strike out the conclusion as to it being purified terpentine.

The Witness: The package was as it was bought. It was stopped up, and sealed, as you would buy it on the market.

By Mr. Butler:
Q. It was a sealed, unopened package?
A. Yes, a sealed, unopened package.
Q. What is exhibit 62?
A. Exhibit 62 is a sample of over-bleached flour which Doctor Boos and I obtained at the Rex Mill, of the Southwestern Milling Company about two weeks ago.
Q. Whereabouts in the mill did you get it.

Mr. Scarritt: Wait a moment. That last question and answer is objected to as not proper rebuttal.

The Court: They may stand.

Claimants except.

A. It was obtained in the pipe which leads the gas into the agitator at a distance of about perhaps 6 inches from the agitator. It was in a position such that the gas was blowing over this, into the agitator.

Mr. Scarritt: We move to strike that out, as not proper rebuttal. Been gone over in chief.

The Court: Now, Judge, I have no objection, but do you want to make an objection, every time, and then a motion to strike it out?

Mr. Scarritt: I want to save the record right.

The Court: Do you think that is necessary, as a lawyer, to do that? If you do, all right.

Mr. Scarritt: I think it is, in view of your Honor's suggestion.

The Court: No, I have never suggested it in my life since the first three months of my practice; but go on. I
2524 want to save your record, and I want you to save it. Of course, if you want to make both motions, all right.

By Mr. Butler:

Q. Are there any nitroso amines in over bleached flour?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. There are.

Q. Do nitroso amines in overbleached flour give the Griess test?

A. Only very faintly, when the Griess test is applied directly.

Q. Have you an exhibit showing that? A. I have.

Mr. Scarritt: Same objection.

The Court: Same ruling.

Q. Is exhibit 63 the exhibit which shows the effect on nitroso amines of the Griess test?

Mr. Scarritt: Same objection.

A. It is.

Q. That shows a slight reaction?

A. Very faint reaction.

Q. How long has that been subjected to the test,—that solution. A. About one hour.

Q. If nitroso amines are first treated with an alkali, then will they give the Griess test?

Objected to as not proper rebuttal.

Overruled.

Claimants except.

A. They will. They will give the Griess test, because alkali reacts with the nitroso amines, and forms alkali nitrites, which give the Griess test.

Q. What is exhibit 64?

A. Exhibit 64 is an exhibit showing the Griess test on
2525 a sample of this Rex overbleached flour, after the flour was treated with alkali. The nitroso amines in this sample of flour correspond to twelve parts per million, when expressed nitrogen. These two are compared, side by side.

Claimants move to strike out the answer and the exhibit, as not proper rebuttal.

Overruled.

Claimants except.

Q. Since the testimony given here, that urea in the body is a defense against nitrites, have you made any tests to ascertain whether urea, at any body heat, will decompose nitrous acid?

Same objection.

A. I have.
Q. And to ascertain, if it will, how long it will take?
A. I have.
Q. Have you any exhibits upon that point?
A. I have.
Q. Let me see them.

(Witness produces exhibits.)

Q. By means of exhibits 65, 66 and 67, if they be sufficient for the purpose, you may explain your tests to determine whether or not urea, under given circumstances, will decompose nitrous acid?

Mr. Scarritt: We object to that question, if your Honor please, as irrelevant, incompetent, and immaterial, because it does not include the circumstances.

Mr. Butler: I meant for him to give the circumstances.

Q. Tell the circumstances and manner of making these tests, in detail—that is, in essential detail,—temperature, and quantities, and dilutions, and concentration, and all, and make it plain just how.

A. Exhibit 67 is an exhibit showing an experiment in which 1/10th part per million of nitrous acid, expressed as nitrogen and the equivalent quantity of urea, in the [present] of .2 per-

cent hydrochloric acid, were allowed to react two hours at body temperature or 37-½ degrees was the temperature employed.

2526 The Court: 98.4 Fahrenheit?

A. Well, approximately. No. 66 is an exhibit which contains the same amount of nitrous acid as the preceding exhibit, and it is used as a check test, to see whether or not the nitrous acid disappears.

Q. They are really duplicates?

A. They are really duplicates, except the one contains the urea, which might react with the nitrous acid, and the other contains none. The experiment shows no change.

Q. How long exposed? A. Two hours.

Q. Now, as to the acid. What was the hydrochloric acid?

A. .2 per cent hydrochloric acid.

Q. How does that compare? Is that the same kind?

Mr. Scarritt: I want to move to strike the matter out, as not being proper rebuttal, and object, also, to the exhibits, as not being proper rebuttal.

The Court: As to the last three questions the objection is overruled.

Claimants except.

By Mr. Butler:

Q. Is that the same kind of acid that exists in the stomach?

A. It is, and the same concentration, approximately.

Q. Go on.

A. Exhibit 65 is a similar experiment, in which the same amount of nitrous acid was used, and 50 times as much urea, so that we might see all the more, whether urea will react with the nitrous acid. The temperature was the same. The time was two hours. There was no perceptible reaction. The color of the three may be compared.

Claimants move to strike out the answer, as not proper rebuttal.

Overruled.

Claimants except.

2527 Q. Now, in order that we may understand this. Which is the one that hasn't the urea in it? A. Exhibit 66.

Q. Exhibit 66? That is the standard of color?

A. That is the standard.

Q. And the test is, that if the others, having the urea, remain the same, there is no reaction?

Claimants object for the reason it is not proper rebuttal.

Overruled.

Claimants except.

A. That is correct. That is the test.
Q. And if the reaction takes place, the color of those having the urea will become lighter? A. Very much lighter.
Q. And if the reaction becomes complete, it will become transparent in color?

Same objection.

Overruled.

Claimants except.

A. It will.
Q. One of those was subjected 17 hours?
A. These are all subjected to two hours. I have the other experiments, at 17 hours.
Q. You may produce the ones at 17 hours.

(Does so.)

Q. Which is the one without urea? A. 68.
Q. Which is the dilute urea? A. 69.
Q. And then the more urea,—50 times as much? A. 70.

A Juror: Where did you get the urea—out of the mouth, or out of the stomach?

The Witness: It was bought on the market. It was supposed to be pure urea. Exhibit 68 is the exhibit in which we had the same quantity of nitrous acid as in the preceding experiments. The acid used was acetic acid, instead of hydrochloric acid. The experiment lasted 17 hours. In 69, we have exactly the same conditions, with the exception that we have the
2528 equivalent quantity of urea in that solution. Exhibit 70 is an exhibit containing the same amount of nitrous acid, but 50 times as much urea. The experiment was at the same temperature, and lasted 17 hours. The experiments show that there was no perceptible decrease in the amount of nitrous acid due to a reaction with the urea.

Mr. Scarritt: We move to strike out the answer, not being proper rebuttal, and also the exhibits.

Motion overruled.

Claimants except.

Mr. Butler: The exhibits used by the witness in this testimony are offered in evidence.

Objected to by claimants as not being proper rebuttal.

Objection overruled, and exhibits admitted.

Claimants except.

Cross-Examination

By Mr. Elliott:

Q. Doctor Acree, I hand you a book, volume 1, Beilstein's "Handbuch der Organischen Chemie", on page 1291, and ask you to read into the record; if you read German, the underscored portion.

Mr. Butler: Objected to as irrelevant and immaterial and not cross-examination.

The Court: Objection sustained.

Mr. Scarritt: Make an offer.

The Court: I understand the offer is made, and the offer excluded, and the defendant excepts. It is excluded as not being cross-examination.

Mr. Scarritt: We haven't got this in the record.

The Court: The stenographer may copy the offer into the record, at his leisure.

The offer was as follows:

"Salpetrige Saure zerlegen den Harnstoff in CO_2, Stickstoff und Wasser. $CO(NH_2)_2+3\ NaClO = NaCO_3+NaCl$
2529 $+N_2+H_2O+2HCl$; $-CO(NH_2)_2+2NHO_2 = CO_2+N_4+3H_2O$."

By Mr. Elliott:

Q. Doctor Acree, is it not a fact well known to you that nitrous acid and urea mutually decompose each other?

A. They do, in concentrated solutions, and in the solutions such as I have given here. The experiments show that the rate of decomposition is very, very slow.

Q. Do you wish to be understood as testifying that urea will not decompose nitrous acid, in the presence of another acid?

A. I wish to be understood as believing, as having shown that in this concentration—

Q. (Interrupting): That isn't what I was asking. I was asking you if you wished to be understood as denying that urea would decompose nitrous acid?

The Court: At what temperature?

Mr. Elliott: I didn't limit it to temperature,

The Court: Go on.

The Witness: I do not.

By Mr. Elliott:

Q. Now, tell me what exhibit 65 is?

A. Exhibit 65 is an exhibit showing the action of nitrous acid on 50 equivalents of urea, in the presence of hydrochloric acid, during two hours.

Q. Where did you get that urea?

A. As I stated, it was bought in the market.

Q. Who bought it?

A. A young man named Harry Fenton, in the laboratory, bought it in a drug-store in the city. It was in an unbroken package.

Q. Did you make any examination of that urea, yourself, to see if it was pure?

A. No. It looked to be pure, and was in an unbroken package.

Q. Just answer my question. You did not make any examination of it, yourself? A. No.

2530 Q. Now, what was the quantity of urea put in here?

A. The quantity of urea, as I stated, is, in this solution, 1/100th of a milligram of urea, the equivalent of the nitrous acid which I used in there.

Q. Can you give me the amount, quantitatively?

A. I am giving it to you.

Q. Could you put it in parts per million?

A. I didn't put it that way. The amount in here is 1/100th of a milligram.

Q. Then how much nitrous acid did you have?

A. The equivalent amount of nitrous acid, equivalent to that.

Q. Then you had the same amount of nitrous, and the same —equivalent amount of urea?

A. In exhibit 65 there are 50 equivalents of urea to one equivalent of nitrous acid.

Q. 50 equivalents of urea to one equivalent of nitrous acid?

A. Yes. So there are 50/100th of a milligram of the urea to 1/100th milligram of the nitrous acid, expressed as I have stated. That was done to give every chance for the nitrous acid to react with the urea.

Q. Now, tell me what 66 and 67 are?

A. 66 is the check test, with the same amount of nitrous acid, same amount hydrochloric acid, run the same length of time, same temperature. That was simply a comparison to ascertain whether or not any nitrous acid has been decomposed. If the colors were the same,—practically the same, it would

show there was practically no decomposition of the nitrous acid.

Q. And each of these has the Griess reagent in it?

A. Both of them, same amount of Griess test. They were made at the same time, under similar conditions.

Q. And exhibit 65 has the Griess reagent in it?

A. Yes. It has the same amount. Those are comparable in every way, in so far as I have stated the experiments.

Q. At what temperature did you conduct these experiments?

2531 A. At about 37½ degrees centigrade, or about 98 degrees, say, Fahrenheit.

Q. Did you ever make a test for decomposing nitrous acid with urea? Have you ever seen it decompose nitrous acid?

A. Yes. As I remember, those were the stock experiments that we had in our chemistry, in former times. You understand I cannot remember every experiment I have ever done.

Q. But you have seen urea decompose nitrous acid, haven't you?

A. Yes, as I remember. In very concentrated solutions, I might state. If I may state further, these experiments show that in these—

By Mr. Scarritt: (Interrupting) We object.

Mr. Butler: What is it, Doctor?

The Witness: I would like to finish it.

Mr. Scarritt: We object to what these experiments show, because he has gone over it.

The Court: All right.

By Mr. Elliott:

Q. I will ask you if urea isn't used to remove nitrous acid from nitric acid, in every day laboratory practice, and at room temperature?

A. It is used for that, but it is generally used in concentrated form, and boiled up with the nitric acid, in order to decompose nitrous acid.

Q. Now, you say that is not done at room temperature?

A. It may be done at room temperature.

Q. It may be done, then, at room temperature? A. Yes.

Q. At room temperature?

A. Yes. It takes a much longer time at room temperature than it does at a higher temperature.

Q. But, I say, as a matter of fact, that is a matter of

2532 every-day common laboratory experimentation, isn't it, at room temperature? That is the fact, isn't it?

A. I shouldn't be at all surprised.

Q. You know it, don't you, Doctor?

A. I should say it would react, of course. It would react more slowly at room temperature than it does at the higher temperature. At room temperature it would react far more slowly, so that, in 24 hours, you would not notice any perceptible decomposition of the nitrous acid.

Q. Why is it, if you used urea, you do not get destruction of the nitrous acid, if this test goes quantitatively?

A. The point is this—

Q. Can you answer me?

A. The reason I do not, is this: In these very dilute solutions, I have here about .1 part of nitrous acid, expressed as nitrogen, per million, corresponding, for instance, to the amount assumed, in Court, here, to be present in saliva. In those very dilute solutions the reaction goes so slowly that the nitrous acid is not decomposed, even as you see, to an appreciable extent, in 17 hours. The reason is this—

Q. Never mind. A. I must finish that answer.

Mr. Butler: Let him answer it.

The Court: Just let him finish, Mr. Elliott, please.

Mr. Elliott: If you are answering my question—

The Witness: I am answering your question. The more concentrated the solution, the more rapidly the reaction takes place.

Q. You have said that two or three times, Doctor. We understand it.

A. Now, wait a moment. In these very dilute solutions, the reaction is taking place, but it is taking place so very slowly that not enough of the nitrous acid is decom-
2533 posed to allow you to tell the difference between the check and the amount in which the nitrous acid is acting on the urea.

Q. You say it is taking place in there?

A. It is taking place, and so slowly you can't, by this method, measure the amount that has decomposed in 17 hours.

Q. But it is taking place? A. Oh, yes.

Q. You made no experiments, other than at room temperature, did you? A. No. I worked at body temperature.

Q. How do you know this urea was active? A. Is active?

Q. How do you know this urea you used, which you say you did not test,—how do you know it was active?

A. What acted upon?

Q. How did you know it was active?

Mr. Butler: Any good.

A. Oh. The urea was in an unbroken, sealed package.

By Mr. Elliott:

Q. Now, I just asked you this: How did you know it was active, if you made no tests?

A. I took the urea as bought from Merck, which looked to be a very pure article, and was in an unbroken package.

Q. You have stated all that, Doctor. Just answer the question, please. If you made no test to find out, how do you know that the urea used, as a matter of fact was active?

A. I know that urea is active, because I have made other experiments, as I stated, at other times, with more concentrated solutions.

Q. But you didn't make any other with this specimen?

A. Not at this time; no, sir.

Q. And you made no test of this urea other than you
2534 have indicated, did you? A. No.

Q. You made only the tests you have described, but you didn't test the urea? A. No.

Q. Now, I will ask you. Will urea not decompose the nitrous acids which might be present in bleached flour, assuming this amount of nitrite reacting material to be 1.8 part per million?

Objected to as not cross-examination.

Overruled.

A. I should say that it will decompose it, if brought together with it under proper conditions, but, if the concentration be 1.8 per million, for instance, the rate of decomposition will be very, very slow, corresponding somewhat to the experiments I have carried out here.

Q. Have you made any other experiments to demonstrate this fact, than those you have indicated?

A. Demonstrate—?

Q. The facts you are now testifying to—the action of urea?

A. Not at this time.

Redirect Examination

By Mr. Butler:

Q. (Exhibit 68 is shown to the witness) What is that?

Objected to as not proper redirect.

Overruled.

Claimants except.

A. This is the bottle, as far as I can see, of urea, that we used to carry out these tests with.

Q. Is that the very same bottle, or one comparable with it?

A. This is one exactly the same size, and looks; from the amount gone I should say it was the same bottle we had. We had no other bottle in the laboratory.

Claimants move to strike out the answer, [—] improper
2535 redirect.

Overruled.

Claimants except.

A. This is marked "highest purity, Merck."

Mr. Butler: This is offered in evidence.

Witness Excused.

Thereupon both sides rested.

This was all the evidence offered or heard on the trial of said cause.

Court thereupon adjourned to meet again at 9:30 o'clock, Tuesday, July 5, 1910.

2536 Gov. Exhibit 1.

The following are Exhibits 1-2-3-4-5 & 204 as referred to in evidence and in the stipulation.

United States of America,

Department of the Interior,

United States Patent Office.

To all to whom these presents shall come,—Greeting:

This is to Certify that the annexed is a true copy from the Records of this Office of the,

Letters Patent of
James N. Alsop,
Number 759,651, for granted May 10,1904,
Improvement in Processes of Treating Flour.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 22nd. day of December, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

Seal
Patent Office
United States
of America.

F. A. TENNANT,
Assistant Commissioner of Patents.

No. 759,651,

The United States of America,

To all to whom these Presents shall come:

Whereas James N. Alsop, of Owensboro, Kentucky, has presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in processes of treating flour, a description of which invention is contained in the Specification of which a copy is hereto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a patent under the law;

Now therefore these letter patent are to grant unto the said James N. Alsop, his heirs or assigns for the term of seventeen years from the tenth day of May, one thousand nine hundred and four, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the patent office to be affixed, at the city of Washington, this tenth day of May, in the year of our lord one thousand nine hundred and four and of the Independence of the United States of America the one hundred and twenty-eighth.

Seal
Patent Office
United States
of America.

E. B. MOORE,
Acting Commissioner of Patents.

No. 759,651. PATENTED MAY 10, 1904.

J. N. ALSOP.

PROCESS OF TREATING FLOUR.

APPLICATION FILED JUNE 2, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

2537 Gov. Exhibit 2.

United States of America,

Department of the Interior,

United States Patent Office.

To all to whom these presents shall come, Greeting:

This is To Certify that the annexed is a true copy from the Records of this Office of the

Letters Patent of
James N. Alsop,

Number 758,883, granted May 3, 1904,

for

Improvement in Methods of Generating Gaseous Mediums from Air.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 22nd. day of December, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

Seal
Patent Office,
United States
of America.

F. A. TENNANT,
Assistant Commissioner of Patents.

No. 758,883,

The United States of America,

To all to who these Presents shall come:

Whereas James N. Alsop, of Owensboro, Kentucky, has presented to the Commissioner of Patents a petition praying for the grant of Letters Patent for an allaged and useful improvement in Methods of Generating Gaseous Mediums from Air, a description of which invention is contained in the Specification of which a copy is hereto annexed and made a part hereof, and has complied with the various requirements of Law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a Patent under the Law;

Now therefore these Letters Patent are to grant unto the said James N. Alsop, his heirs or assigns for the term of seventeen years from the third day of May, one thousand nine hundred and four, the exclusive right to make, use, and vend

the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this third day of May, in the year of our Lord one thousand nine hundred and four and of the Independence of the United States of America the one hundred and twenty-eighth.

Seal
Patent Office,
United States
of America.

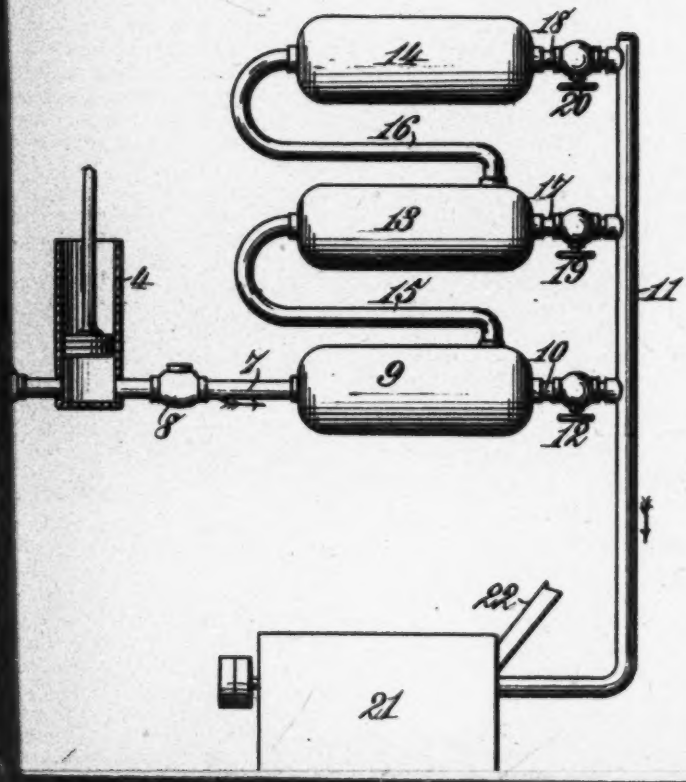
E. B. MOORE,
Acting Commissioner of Patents.

PATENTED FEB. 13, 1906.

J. E. MITCHELL.

METHOD OF TREATING FLOUR.

APPLICATION FILED SEPT. 24, 1904.



2538

Gov. Exhibit 3.

United States of America,

Department of the Interior,

United States Patent Office.

To all to whom these presents shall come, Greeting:

This is To Certify that the annexed is a true copy from the Records of this Office of the

Letters Patent of
James N. Alsop,

Number 758,884, granted May 3, 1904,

for

Improvement in Apparatus of Generating Gaseous Mediums from Air.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 22nd. day of December, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

Seal
Patent Office,
United States
of America.

F. A. TENNANT,
Assistant Commissioner of Patents.

No. 758,884,

The United States of America.

To all to whom these Presents shall come:

Whereas James N. Alsop, of Owensboro, Kentucky, has presented to the Commissioner of Patents a petition praying for the grant of Letters Patent for an alleged new and useful improvement in Apparatus for Generating Gaseous Mediums from air, a description of which invention is contained in the Specification of which a copy is hereto annexed and made a part hereof, and has complied with the various requirements of Law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a Patent under the Law;

Now therefore these Letters Patent are to grant unto the said James N. Alsop, his heirs or assigns for the term of seventeen years from the third day of May, one thousand nine

hundred and four, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this third day of May, in the year of our Lord one thousand nine hundred and four and of the Independence of the United States of America the one hundred and twenty-eighth.

Seal
Patent Office,
United States
of America.

E. B. MOORE,
Acting Commissioner of Patents.

2539 Ex. 4.

Order No. ..... Date 2-17-1910
Lexington Mill & Elevator Co.
Ship to B. O. Terry
At Castle Mo.
P. O. Address Greencastle
When April 1st, 1910 or sooner
Terms 1% ten days 30 net from arrival
625 Cream 5X Flour 5.00

Subject to acceptance by the Lexington Mill & Elevator Co.

2540 Ex. 5.

Greencastle, Missouri, Feb. 17th, 1910

We the undersigned do hereby guarantee Cream 5x & 4x patent flour, sold and made by us to give the purchaser (B. O. Terry) entire satisfaction as to quality, and to be within the meaning of state and national pure food laws.

We the undersigned do further agree if Cream 5x & 4x patent flour do not give satisfaction to customers of B. O. Terry refund to purchaser the purchase price of flour if paid for, and if unpaid for remove flour from his possession at our expense.

LEXINGTON MILL & ELEVATOR CO.
By Malone, Salesman

2541 Government's Exhibit 7
6/3/10. Wm. B.

United States of America, Department of the Interior,
United States Patent Office.

To all to whom these presents shall come,—Greeting:

This is to Certify that the annexed is a true copy from the Records of this Office of the

Letters Patent of
John E. Mitchell, Assignor to
Alsop Process Company,
Number 812,764, granted February 13, 1906,
for
Improvement in Methods of Treating Flour.

In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 22nd day of December, in the year of our Lord one thousand nine hundred and nine and of the Independence of the United States of America the one hundred and thirty-fourth.

Seal
Patent Office.
United States
of America,

F. A. TENNANT,
Assistant Commissioner of Patents.

No. 812,764

The United States of America,

To all to whom these Presents shall come:

Whereas John E. Mitchell, of St. Louis, Missouri, has presented to the Commissioner of Patents a petition praying for the grant of Letters Patent for an alleged new and useful improvement in Methods of Treating Flour. He having assigned his right, title, and interest, in said improvement, to Alsop Process Company, of St. Louis, Missouri, a corporation of Missouri, a description of which invention is contained in the Specification of which a copy is hereto annexed and made a part hereof, and has complied with the various requirements of Law in such cases made and provided; and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a Patent under the Law;

Now therefore these Letters Patent are to grant unto the said Alsop Process Company, its successors or assigns for the term of seventeen years from the thirteenth day of February, one thousand nine hundred and six, the exclusive right to make, use, and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed, at the City of Washington, this thirteenth day of February, in the year of our Lord one thousand nine hundred and six and of the Independence of the United States of America the one hundred and thirtieth.

Seal
Patent Office.
United States
of America,

F. I. ALLEN,
Commissioner of Patents.

2543 Whereupon, at the close of all the testimony in the case the claimant and defendant asked the court to instruct the jury that upon the pleadings and all the evidence in the case their verdict must be for the claimant and defendant, which request the court overruled, and claimant and defendant duly excepted thereto, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"1. The jury are instructed and charged that under the pleadings and all the evidence in this case your verdict must be in favor of the claimant or defendant herein upon all the counts or charges mentioned in the libel herein."

Which instruction the court refused to give, and the defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"2. The jury are instructed and charged that there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been mixed and packed with any substance so as to reduce or lower or injuriously affect its quality or strength, and upon that count or charge in the libel your verdict must be in favor of the claimant or defendant herein."

Which instruction the court refused to give, and the defendant then and there and at the time excepted to the ruling of the Court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

2544 "3. That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question is mixed, colored, coated or stained in a manner whereby damage or inferiority is concealed."

Which instruction the court refused to give, and the defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"4. That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the

effect that the flour in question contains an added poisonous or other added deleterious ingredient which may render it injurious to health."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"5. That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been misbranded within the meaning of the Pure Food Act."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"7. That the burden of proving the allegations of the libel to be true is upon the prosecution and that before the jury can find against the claimant or condemn the property
2545 in question on any of the charges alleged in the libel they must find such charges to be true beyond a reaonable doubt and proven not only by a preponderance of the evidence on the part of the government but to the entire satisfaction of the jury."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"9. That the burden is upon the prosecution to prove the truth of the allegations in the libel, that the flour in question has been packed and mixed with a substance known as nitrite or nitrite reacting material and that such substance has been so mixed and packed with the flour as to reduce or lower or injuriously effect its quality or strength, and unless you find that the truth of such allegations has been so proven you cannot find against the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant or defendant."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"10. That the burden is upon the prosecution to prove the truth of the allegations in the libel that the flour in question has been treated by the Alsop process and that by such treatment the said flour has been mixed, colored and stained in a manner whereby damage and inferiority is concealed, and unless you find that the evidence does so prove that damage and inferiority actually existing in the flour seized in this case has been so concealed by its having been treated by the Alsop Process as alleged in the libel, you cannot find against
2546 the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"11. That the burden is upon the prosecution to prove the truth of the charge in the libel, that by the treatment of the flour in question by the said Alsop Process it has been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, which may render said flour injurious to health.

And in this connection you are further instructed that it is incumbent upon the Government to prove that any such added poisonous or other added deleterious ingredients, if any contained in said flour, are of such a character and contained in the flour seized in such quantities, conditions and amounts as may render said flour injurious to health, and unless you find that all of such facts are so proven you cannot find against the claimant or condemn the flour in question under that charge in the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"12. That the burden is upon the prosecution to prove the allegations in the libel that the flour in question was
2547 sold under a distinctive name of another article than itself and was labeled or branded so as to deceive or mislead the purchaser, and that the packages or sacks containing the flour in question, and the labels thereon, bear a statement, design or device regarding the ingredients or substance contained therein, which are false or misleading. And unless you find the truth of such allegations have been so proven you cannot find against the claimant or condemn the flour in question under this charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant or the defendant."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"13. "If unbleached flour or flour that is naturally aged contains nitrites or nitrite reacting material, and that such nitrites or nitrite reacting material are naturally present in such flour in practically the same manner as in the flour seized, then the flour seized cannot be condemned and your verdict on the charge relating to added poisonous or other added deleterious ingredients must be for the claimant or defendant."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"14. The law exempts from its operation poisonous or deleterious ingredients occurring naturally in food products, including flour, and if the jury believe that the nitrites or nitrite reacting material is a substance normally and naturally occurring in usual and ordinary food products in
2548 amounts the same as or greater than is present in the flour seized, then such nitrites or nitrite reacting material in the seized flour are not poisonous or deleterious within the meaning of the law, and the flour seized may not be condemned."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"15. If nitrites or nitrite reacting material are usually and ordinarily imparted naturally to the usual and ordinary food products which are continuously used for food consumption without injury to health, then the adding in lesser or no greater amounts of such nitrites or nitrite reacting material by harmless methods to other food products, including flour, is not adding poisonous or other added deleterious ingredients to such food products within the meaning of the law."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the court to instruct the jury as follows:

"16. The law does not prohibit the adding of nitrites or nitrite reacting material to flour, and a jury cannot find for the Government or against the claimant, even if it be shown that nitrites or nitrite reacting material was added to the flour in question, unless they believe from a preponderance of the evidence that such addition, if any, rendered said flour injurious to the health of those who might consume the bread or other foods made from said flour."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

Whereupon the claimant and defendant requested the
2549 court to instruct the jury as follows:

"17. Flour is not eaten in the raw state and if the nitrites or nitrite reacting material present in flour bleached by this Alsop Process is substantially eliminated or greatly reduced during the process of bread making or other process of preparing flour for consumption, the jury may take this fact into consideration in determining as to whether or not the flour contains any substance which may render it injurious to health."

Which instruction the court refused to give, and the claimant and defendant then and there and at the time excepted to the ruling of the court, which exceptions were allowed.

After arguments by counsel for the respective parties the court charged the jury as follows:

2550 In the District Court of the United States, Western District of Missouri, Western Division.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour.
Lexington Mill and Elevator Company, Claimant.

The Charge to the Jury by the Court, Smith McPherson, Judge.

April 9th, 1910, Arba S. Van Valkenburgh, the then United States Attorney for this Judicial District, in his official capacity as such officer filed with the clerk of this court a pleading designated by law as a libel. Later on, to-wit, May 19th, 1910, Mr. Van Valkenburgh as such officer as aforesaid filed an amended libel in the name of the United States of America, which in effect charged that the said claimant, the Lexington Mill and Elevator Company, April 1st, 1910, sold and shipped from Lexington, in the State of Nebraska, to a grocer by the name of B. O. Terry, at and of Castle, in Sullivan County, Missouri, a shipment of flour containing six hundred and twenty-five (625) sacks of flour of forty-eight pounds of flour to the sack. The said libel charges the route of shipment, namely, over two or more connecting railroads between the two said points. The said Terry buying said flour and receiving said shipment for the purpose of retailing said flour to consumers at the said town of Castle and to his customers in the vicinity thereof, and for said purposes the said Lexington Mill and Elevator Company made said shipment.

2551 It is further charged in the said libel, that is to say, that the flour in question was treated by a process for bleaching flour known as the Alsop Process, which process consists of the generation by means of electricity of nitrogen peroxide gas which is mixed with atmospheric air, and the mixture brought into contact with the flour in a state of agitation, and that the flour was thereby caused to be adulterated in certain particulars, namely:

a. In that substances known as nitrites or nitrite-reacting material has been mixed and packed with the flour so as to reduce and lower and injuriously affect its quality and strength in these respects among others, to-wit: that the capacity of the said flour to change and improve as it would have changed and improved if aged by natural processes has been destroyed: That by direct action the elasticity of the gluten has been lessened and impaired so as to injuriously affect the bread-making qualities of the flour; That other constituents

of the flour have been injuriously affected so as to reduce, lower and impair its bread-making qualities.

b. In that by the treatment of the flour by the Alsop Process it has been mixed, colored and stained in a manner whereby damage and inferiority is concealed in these respects among others, to-wit: That the inferiority of freshness or newness, an inferiority which is present in flour freshly milled and which manifests itself, among other things, in inferiorities of color, of elasticity of gluten, and of the quality of other ingredients which affect its value for bread-making purposes, is thereby concealed; That said flour has been caused to simulate the appearance of flour which has been properly aged and conditioned by natural processes after being milled; That this treatment by the Alsop Process has concealed the inferiority of said flour and has given it the appearance of a better grade of flour than it really is, and further that the flour was when milled, when bleached, and now is of a grade of flour inferior to a patent flour and inferior to the flour made from the
2552 first quality of hard wheat, and that by the Alsop Bleaching Process it has been caused to have the appearance if a Patent flour and of a flour made from the first quality of hard wheat, and that thereby the inferiority of said flour was and is concealed and that in other respects also the inferiority of said flour was and is concealed.

c. In that by the treatment as aforesaid the said flour has been caused to contain added poisonous or other added deleteriout ingredients to-wit, nitrites or nitrite-reacting material, which may render said flour injurious to health.

The amended libel further charges that said flour is misbranded in substance as follows:

a. That the bags and sacks containing such flour were labeled as follows:

"L. 48, Lexington Cream XXXXX Fancy Patent. This flour is made from the first quality hard wheat."

That in truth and in fact a patent flour is, and is known and recognized to be, the best grade of flour, and which consists only of that portion of the flour content of the wheat known as the "middlings". But that the flour contained in said sacks is not patent flour, but is a grade and quality of flour inferior to patent flour being a mixture of middlings together with a commercially inferior grade of flour, and a flour which before bleaching was darker in color than a patent flour and inferior in grade, quality and strength to patent flour, and that this mixture was shipped into Missouri labelled under the distinctive name of another article, and was labelled

so as to deceive and mislead the purchaser, in the respect that it purported to be a patent flour whereas in truth and in fact it is not a patent flour.

b. That the label on each sack contained a statement, "This flour is made of first quality hard wheat", whereas in truth and in fact the flour was not made of first quality hard
2553 wheat, but was milled in whole or in part from a grade or grades of wheat inferior to first quality hard wheat, namely, "yellow berry", and other inferior wheat, and was sold under the distinctive name of another article than itself, and that the flour seized purported to be made from the first quality of hard wheat, whereas in truth and in fact it was made in whole or in part of wheat inferior to the first quality hard wheat, namely, "yellow berry", and other inferior wheat and therefore was sold under the distinctive name of another article than itself and was misbranded within the meaning of the Act of Congress.

To this amended libel which contains the government's charge and a statement of its alleged cause of action, the Lexington Mill and Elevator Company, claimant herein, has filed its answer, which in substance and meaning states:

That the Lexington Mill and Elevator Company is interested in the flour seized; that the same was manufactured at its mill in Lexington, Nebraska, and sold to B. O. Terry of Castle, Missouri, and was shipped from Lexington, Nebraska, to Terry at Castle, Missouri, under a guaranty that the same was not adulterated; that the claimant has not been paid for the flour, but that after the seizure, was required to and did furnish Terry other flour in lieu of the flour seized; that if the flour seized be condemned, claimant will suffer loss to the extent of its value, namely, Seven Hundred and Fifty ($750.00) Dollars; it admits the shipment of the flour by the route alleged in the libel, and that the flour was branded as indicated by an amendment to the amended libel.

It admits that the flour was treated by a process known as the Alsop Process, but denies that the same was adulterated within the meaning of the Act of Congress, and denies that any substance known as nitrites or nitrite-reacting material has been mixed or packed with the flour or any part thereof so as to injuriously reduce or lower its quality or strength in any respect whatever, and denies that the flour has been
2554 mixed, colored or stained in a manner whereby damage or inferiority is concealed in any respect whatsoever, and denies that the same has been treated in any manner whereby the grade or the quality of the flour has been concealed, and denies that the treatment of the flour has given it the

appearance of a better grade of flour than it really is, and denies that any of the flour is inferior to a patent flour, and denies that any of the same was when milled or now is of a grade of flour inferior to a grade of flour made from the first quality of hard wheat, and denies that the quality of said flour or wheat from which it was made was in any manner concealed, and denies that the same or any portion thereof has been caused to contain any added poison or other added deleterious ingredient, which may render said article injurious to health.

It admits and alleges that the flour was labeled as the evidence shows it to have been labeled, but denies that so-called patent flour is known or recognized to be a grade of flour consisting only of that portion of the content of the wheat known as "middlings", and says that it is not true that the flour contained in said sacks is not a patent flour, or that it is of a grade or quality inferior to patent flour, or that it is a mixture of middlings together with a commercially inferior grade of flour, or of a flour which was of a darker color than a patent flour, or inferior in grade, quality or strength to a patent flour, and denies that the flour was mixed and shipped into Missouri and sold under the distinctive name of another article than itself, or that the same was labeled in any manner so as to deceive or mislead the purchaser, or that it did deceive or mislead the purchaser in any respect whatever.

It admits that the sacks were labeled as the evidence shows them to have been labeled, but denies that the flour was whole or in part from grade of soft wheat, or that it was sold under the name of an article different from what it really was, or that it was in any respect misbranded.

2555 It admits that the flour was treated by the Alsop Process and in that connection alleges that the process consists of generating, in rapid succession, a flaming electric discharge in a current of air in proximity to such electric discharge, and in conducting the air, as modified by such discharge, into the presence of the flour as it is being continuously passed through a revolving reel or agitator, but denies that the flour was in any way adulterated, or that by the process any poisonous or other deleterious ingredient have in any manner been added thereto or imparted thereto, or that the flour is in any way injurious to health or contains any added deleterious ingredient, or that the same is adulterated in any manner, or that by such process any damage or inferiority is in any manner concealed, or that the quality or strength of the flour is in any manner reduced or lowered.

To this answer the government by its counsel has filed a reply.

On the issues thus outlined as contained in the amended libel, and the answer and reply this case is to be determined.

By reason of the libel heretofore referred to a writ of seizure was issued by the order of this court commanding the United States Marshal for this District to seize the said shipment of flour and the Marshal still holds the same subject to the further orders of the court herein.

The statute under which this proceeding was brought and the case now being tried is an enactment of the Congress of the United States approved by the then President June 30th, 1906, (four years ago.) This statute as to its validity is challenged by the claimant herein. But with that question you have no concern other than to observe it, because the court holds that the Congress of the United States with the approval of the President had the power under the Constitution of the United States to enact the statute that was enacted and under which we are proceeding, and the court holds and so directs you that the statute is a valid enactment, and to
2556 be enforced in any and all cases where the evidence and the facts come within the wording of the statute.

This statute is named "The Food and Drugs Act", and is an act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes. It will be observed that the statute deals with drugs, medicines, liquors, and foods. A part of the statute is with reference to drugs, medicines and liquors, and likewise confectionery but with which in this case we are not concerned except as the same has a bearing with reference to foods. That part of the statute with reference to foods reads as follows: "That for the purpose of this act an article shall be deemed to be adulterated in the case of food:

"First: If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength * * * * * *

"Fourth: If it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed.

"Fifth: If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health."

The statute further prohibits the misbranding of articles of food and provides in substance as follows:

"That the term "misbranded" as used herein shall apply to articles of food or articles which enter into the composition of food, the package or label of which shall bear any statement regarding such article or the ingredient or substances contained therein which shall be false or misleading in any particular."

Any statement or expression of opinion by the court during the trial of this case with reference to any fact or alleged fact or any criticism by the Court of any witness or party or counsel on either side, are each and all withdrawn, and you will
2557 treat and consider the case as if such statements or criticism by the Court were not made. And I charge you to give no consideration to the same or any part thereof.

You are the sole judges of the facts in this case. Much testimony in this case was given by scientists and experts who testified before you. The testimony of the experts as to their opinion is not binding upon the jury and is merely advisory and may be given such weight by the jury as the jury may deem proper in view of all the facts and circumstances in evidence, or such expert testimony may be wholly disregarded by the jury in arriving at their verdict.

While you are the judges of the facts and of the testimony and what weight shall be given thereto regardless of expressions of opinion by me, it is my belief that I can be of substantial aid to you in stating some fact which in my opinion are so well established by the evidence as that you ought to have but little or no argument with reference thereto, and take the same as established facts.

However, notwithstanding my statements or expressions of opinion with reference to any fact in the case, you are to remember that you are the sole judges of the facts in the case, and of all deductions to be made therefrom.

It is an established fact and concerning which there is no conflict in the testimony that the flour in question in this case was transported from Lexington, Nebraska to Castle, Missouri, in interstate commerce and was subject to seizure for confiscation, if it is adulterated or misbranded in any respect or particular alleged in the amended libel.

It is also an established fact in the opinion of the court that the flour seized and in question was made from wheat of a 1909 crop grown in the State of Nebraska and known by the name of No. 2 Turkey Wheat, and that the wheat was ground at the claimant's mill at Lexington, Nebraska on the night of March 31st, 1910 and shipped the next day to the said Terry at Castle, Missouri, by whom it was received in about seven days.

2558 It is also an established fact in the opinion of the Court that the wheat from which the flour was made contained a percentage of what is called yellow berry wheat. The witness, Mr. Tucker, the head miller of claimant, testified that the yellow berry was about or approximately ten to twenty-five per cent of the entire amount of the entire wheat used to make the flour in question that has been seized in this case, and the testimony of other millers in Nebraska and Kansas shows that the wheat called "yellow berry" is frequently indeed commonly found mixed with turkey wheat as it is grown in those states, and that the percentage of such yellow berry varies frequently running higher than fifty or seventy-five per cent of the turkey wheat produced in various places and communities in said states. And there is evidence to the effect that but a small part, probably about one per cent of the turkey wheat produced, in the various places in these states which are referred to in the testimony, that is wholly free from the yellow berry wheat. And it appears that it is the common practice of millers in Kansas and Nebraska to mill turkey wheat mixed with this yellow berry.

It is admitted that the flour seized in this case was treated by the Alsop Process for the purpose of bleaching and whitening the same; that that process employs a gaseous substance referred to in the testimony as nitrogen-peroxide gas—NO_2 or N_2O_4.

It appears that nitrogen-peroxide gas is—in concentration—a brownish or yellowish gas heavier than atmospheric air, of offensive odor, corrosive in character, and a poison and deleterious substance, and if taken by a human being in sufficient quantities will produce poisonous action and death.

It appears that when nitrogen-peroxide gas is brought into contact with water or moisture, there is by chemical change produced nitrous acid and nitric acid in equal quantities, and it also appears that each of these acids so produced is a poisonous and deleterious substance which if taken by a human
2559 being in sufficient quantities will produce poisonous action and death.

It appears that the water or moisture content of flour is equal to about ten or twelve per cent of the total weight of the flour, amounting to about five pounds of each of the sacks seized or about twenty pounds in a barrel of flour.

It appears that nitrous acid readily combines chemically with other substances such as are contained in wheat flour and thereby forms nitrites of various kinds, depending upon the character of the substances with which the acid chemically combines.

It appears that such nitrites as may be formed by the introduction of nitrous acid into flour are poisonous and deleterious substances and that if taken by a human being in sufficient quantities, will produce poisonous action and death.

It appears that nitric acid readily combines chemically with other substances such as are contained in wheat flour, and thereby forms nitrates of various kinds depending upon the character of the substances with which the acid combines.

To enable the government to obtain a verdict at your hands in its favor, it is required to furnish such a measure of evidence as to sustain the allegations of the amended libel by a fair preponderance of the evidence. By a fair preponderance of the evidence is meant a greater weight of evidence and it is sufficient if it satisfies your mind that the allegations which it supports are true without regard to which side produces the evidence or the witnesses giving the same. It is not incumbent on the government to show that the allegations of the amended libel in a case like this are true beyond a reasonable doubt. Proofs beyond a reasonable doubt are only exacted in a criminal case, and this is not a criminal case within the meaning of that rule, but it is an action in the nature of a civil action. You are the judges of the weight of the evidence, and of the credibility of the witnesses, and it is for you to say what the truth is.

It is incumbent on the government to prove that the
2560 flour seized was adulterated and misbranded in some respect or particular alleged in the libel. But it need not prove that the flour was adulterated or misbranded in all of the respects and particulars alleged. If it appears from the evidence in this case that the flour was adulterated in any respect or particular alleged, then you must find for the government that the same was adulterated, and if it appears in the evidence that the same was misbranded in any respect or particular alleged, then you must find for the government that the same was misbranded. On the other hand, if you find that it was not adulterated in any respect or particular alleged, then you must find against the government on that issue. And if you find that it was not misbranded in any respect or particular alleged, then you must find against the government on that issue.

One of the issues submitted to you is the alleged violation of the first subdivision relating to food in Section Seven of the Act, which in substance declares an article of food to be adulterated if any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Upon this point the substance of the charges made by the government is, (a) that the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes, has been destroyed by the treatment of the flour by the Alsop process whereby substances known as nitrites or nitrite-reacting material have been mixed and packed with the flour, and, (b), that by direct action of such process the elasticity of the gluten has been lessened and impaired so as to injuriously affect the bread-making qualities of the flour. And, (c), that other constituents of the flour have been by such process injuriously affected so as to reduce, lower, and impair its bread-making quality.

2561 On the first branch of this particular issue it appears that wheat flour improves by lapse of time and processes of natural aging. I charge you that if the treatment of this flour by the Alsop process for the purpose of bleaching and whitening resulted in any injury to the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes, that your finding must be for the government that the flour is adulterated.

On the second branch of this particular issue, I charge you that if you find from the evidence that by the direct action and as a result of the treatment of this flour by the Alsop Process the elasticity of the gluten has been lessened or impaired so as to injuriously affect the bread-making qualities of the flour, that your finding must be for the government that this flour is adulterated.

On the third point of this particular issue, the government claims that the treatment of this flour by the Alsop Process caused substances known as nitrites or nitrite-reacting material to be mixed and packed with the flour so as to reduce, lower and impair its bread-making qualities, and so as to render the same injurious to health. If you shall find from the evidence that the flour seized was by such treatment so injured your finding must be for the government that this flour was adulterated.

The substance of the charges of the government that this flour is adulterated in violation of the fourth subdivision relating to food of Section Seven of the law in question, is that by the treatment of the same by the Alsop Process the flour has been mixed, colored and stained in a manner whereby damage or inferiority is concealed in these respects, namely, (a), that the said flour has been caused to simulate the appearance of flour that has been naturally aged and conditioned by natural processes after milling. (b), that the treatment by the Alsop Process has concealed inferiority in said flour, and has

given it the appearance of a better grade of flour than
2562 it really is. (c), That the flour is of a grade inferior to patent flour and inferior of flour made from the first quality of hard wheat, and that treatment of the same by the Alsop Process has caused it to have the appearance of a patent flour and of a flour made from the first quality of hard wheat.

It appears from the evidence in this case that wheat flour when freshly made is inferior to what that same flour will become by the lapse of time and processes of natural aging and conditioning; that the inferiorities of freshness or newness manifest themselves in inferiority of color, of elasticity of the gluten, and of the quality of other ingredients which affect its value for bread-making purposes; and it further appears that by the lapse of time and aging and conditioning by natural processes wheat flour will improve for a period of time, stated to be from two to four months, or thereabouts; and that such improvement increases the value of the flour and makes it lighter in color; and it further appears that this bleaching process makes the freshly milled wheat flour appear to be like and to simulate the appearance which that same flour will assume after natural aging and conditioning. And it further appears that this flour when seized was not naturally aged or conditioned, but was newly milled flour.

On this branch of this particular issue it is for you to say in the light of all these facts and all the evidence whether or not the inferiority of freshness or newness was concealed by the bleaching process.

On the second branch of this particular issue, I charge you that if treatment by the Alsop Process has given to this flour the appearance of a better grade or quality of flour than it really is, you should find for the government that it is adulterated. And upon the third branch of this particular issue I charge you that if you should find from the evidence that this flour is of a grade of flour inferior to patent flour or is a flour inferior to flour made from the first quality hard
2563 wheat, and that bleaching by the Alsop Process has caused it to have the appearance either of a patent flour —as that term will be explained to you in this charge—or the appearance of a flour made from the first quality of hard wheat, then you must find for the government that this flour is adulterated.

The government charges adulteration of this flour in violation of the fifth subdivision relating to food of the section of the statute under which we are proceeding. The words of

that provision are as follows: "If it (in this case meaning flour) contains any added poisonous or other added deleterious ingredient which may render such article (in this case meaning flour) injurious to health".

The substance of the charge found in the amended libel is that by the treatment of the flour by the Alsop Process it has been caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to-wit: Nitrites, nitrite-reacting material, nitrogen peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances.

It is the claim of the government that if the flour contain any added poisonous or other added deleterious ingredient of a kind or character which may render, (that is, which is capable of rendering) such article injurious to health, it is adulterated, and should be condemned for confiscation.

On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredient, it may not be condemned unless it shall further appear that such added substances are in such quantity that the flour shall be thereby rendered injurious to health.

This statute was enacted for the purpose of benefiting and protecting the consumer, which in this case means those who eat bread and cake and pastry and gravy and other products made from wheat flour. This was the purpose that Con-
2564 gress had in mind when it enacted this statute. And in enforcing this statute in proper cases the fact that it will subject the millers to some expense, or the fact, if it be a fact, that it will enable the millers to market their flour more readily or at a better price, is entitled to no consideration and will receive no weight at your hands.

It will be noted that the act does not say "any added poison", but does say "any added poisonous ingredient". The word "poisonous" as an adjective conveys a descriptive meaning and is used in a qualitative sense, and not in a quantitative sense. That is, it refers to the kind of substances, and not to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause "which may render such article injurious to health". It does not say "which does render such article injurious to health", but manifestly it was the purpose of Congress to include in this distinction all ingredients of a poisonous character to which in their essential nature, might be ascribed the tendency to affect health injuriously.

This statute is essentially a remedial one, for the correction of known or supposed abuses with respect to the adulteration of food and other articles of human consumption. It is primarily a statute of prevention. Its meaning is made clear when its purpose is known and borne in mind.

It is not conceivable that the Congress of the United States, when it passed this act, intended that producers and vendors might continue to add poisonous and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the government before proceeding to condemnation of an article of food as adulterated must prove that it contains added poisonous or other added deleterious ingredient in such a quantity as would render such article injurious to health. It is known to everyone that there
2565 is no method of ascertaining or measuring the effect of the consumption of such substances in food upon the public health or upon the health of any particular individual.

It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances.

The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances. Therefore the court charges you that the government need not prove that this flour or food stuffs made by the use of it would injure the health of any consumer. It is the character—not the quantity—of the added substance, if any, which is to determine this case.

The flour seized in this case is an article of food within the meaning of the Act of Congress. And if the treatment of the same by the Alsop Process caused it to contain any added poisonous or other added deleterious ingredient of a kind or character which may render the same injurious to health, then it is adulterated and must be condemned.

It is admitted that this flour was treated by the Alsop Process for the purpose of bleaching or whitening, and the evidence establishes that nitrogen—peroxide gas was employed for that purpose and further establishes that that gas, nitrous acid, nitric acid, and nitrites of the kind which may be produced by such treatment are poisonous and deleterious sub-

stances, and that these substances, when taken in sufficient quantities will produce poisonous action or death.

It appears from the evidence in this case that the bleaching process imparts and adds to flour substances referred to in the testimony as nitrites or nitrite-reacting material, and
2566 such substances were imparted to the flour seized in this case by the bleaching process. It further appears from the evidence that such substances so imparted or added to this flour are qualitatively both poisonous and deleterious, that is to say, that these substances are of a poisonous and deleterious character.

It is well known that wheat flour is not eaten raw. There is evidence in this case that tends to show that during the process of making bread nitrites or nitrite-reacting material contained in the flour is lessened and may be eliminated under some circumstances, but it is also well known that wheat flour is used for the making of other articles of food—biscuits, dumplings, pastry, cake, crackers, gravy, and perhaps other articles of food, which may be consumed by all classes of persons, the young, the old, the sick, the well, the weak, and the strong; and I charge you that it is right for you in reaching your verdict to take these facts into consideration together with all the other proven facts and circumstances in the case.

With reference to the issues as to misbranding, the same divides itself under two heads, one with reference to quality of the flour, and the other with reference to kind of wheat from which it was made. The flour is branded as a fancy patent flour and it is also represented by label on each sack that the flour is made of first quality hard wheat.

There is much dispute in the evidence as to the meaning of the phrase "patent flour". Some of the witnesses for the government testified in substance that the phrase had a well defined meaning among millers, bakers and in the flour market generally, and that it means that the flour so called patent flour, is less than the total flour content of the wheat, and includes what is known in the milling process as the purified middlings, but it is not claimed by the government nor any of the witnesses that patent flour is or contains any definite or specific percentage of the total flour content of the
2567 wheat. On the other hand, some of the witnesses for the claimant testified that the phrase "patent flour" has no definite or recognized meaning among millers, bakers, flour dealers or elsewhere, and that flours containing the total flour content of the wheat excepting low grade, sometimes

called "red dog", are labeled and sold in the market as "patent flour".

It is the law that if the phrase "patent flour" has a well known and well understood meaning generally among millers, flour purchasers, bakers, and in the flour markets of the country then such meaning as so understood is to be attributed to that phrase. In other words, patent flour is the kind of flour that it is generally understood to be by millers, bakers, flour purchasers and in the markets generally. You are therefore to determine, first, Has the phrase "patent flour" any well defined and well known meaning? And, second, is the flour seized that kind of flour, namely "patent flour"? If it is, your finding must be against the government on this branch of the case. But if it is not a patent flour as that phrase is understood as heretofore explained, your finding must be for the government upon this branch of the case.

2568 On the second branch of the charge of misbranding contained in the amended libel, the facts appear to be that the flour seized was manufactured by the claimant at its mill from wheat which was raised in the year 1909, in the general vicinity of Lexington, in the State of Nebraska; that the wheat weighed about fifty-nine pounds to the bushel, and was of a variety known as No. 2 Turkey wheat, in which there was a quantity of wheat known as yellow berry or as sometimes called by millers, "yellow belly", amounting to from ten to twenty-five per cent of the total wheat used to make this flour. The wheat known as yellow berry is commonly found in Nebraska and Kansas growing with turkey wheat. It differs in color and quality from pure turkey wheat, and is considered by the millers less desirable and is of less value commercially.

The words upon each sack, "This flour is made of first quality hard wheat," is in effect a representation that the flour seized was made from the best hard wheat.

Was the wheat from which this flour was made as described by the miller who made it, Mr. Tucker, the best hard wheat?

2569 [On the second branch of the charge of misbranding contained in the amended libel, the facts appear to be that the flour seized was manufactured by the claimant at its mill from wheat which was raised in the year 1909 in the general vicinity of Lexington, in the State of Nebraska; that the wheat weighed about fifty-nine pounds to the bushel, and was of a variety known as No. 2 Turkey wheat, in which there was a quantity of wheat known as yellow berry or as sometimes called by millers "yellow belly", amounting to from ten to twenty-

five per cent of the total wheat used to make this flour. The wheat known as yellow berry is commonly found in Nebraska and Kansas growing with turkey wheat. It differs in color and quality from pure turkey wheat, and is considered by the millers less desirable and is of less value commercially.

The words upon each sack, "this flour is made of first quality hard wheat", is in effect a representation that the flour was made from first quality hard wheat.]

You are to determine whether or not that representation is true. And in so doing you will not be controlled by the fact, if it be a fact, that the wheat used was the best grown in the district where claimant procured his supply for milling, but you have a right to consider the same in comparison with other wheats grown in different places and parts of the country as disclosed by the evidence in the case, and in the light of all of the evidence on this question say whether or not the wheat used was in truth and in fact first quality hard wheat.

2570 I am now about committing this case to you gentlemen for decision. We have been engaged in this trial continuously for five weeks of time, during most of which time the weather has been oppressively and well-nigh unbearably hot. Your work, as well as that of all of counsel in the case and my own work, has been exceedingly laborious and fatiguing. I commend you for the patience you have given to the testimony and to the argument of counsel. I have the right to insist and do insist that you now take this case to your room and give both the facts in the case and the law as I have given you in charge your best and most deliberate judgment. In view of statements that have been made by counsel during the progress of this case, you will not consider and you must put to one side all questions of who the counsel are, or where they are from. This is not a contest between states or sections of the country. Ours is but one country, and this enactment by Congress is for the entire country. The fact that the Patent Office at Washington issued a patent for the Alsop Process has nothing to do with the question of branding correctly, or misbranding of flour. The fact that the Patent Office issued a patent for the Alsop Process does not warrant nor authorize the adulteration of flour as made by the Alsop Process, if it is adulterated. All these things must be put to one side, and your verdict must be determined in accordance with the law and facts in the case. It is of no importance to you, nor is it of importance to me, who will be pleased or displeased in this case whether of counsel or of the parties, or of any other person. The only question is, what is the right, and what the wrong of this case?

Your verdict must recite whether this flour was misbranded or not, and your verdict must further recite whether this flour was adulterated or not, within the meaning of what I have heretofore said to you. And that there may be no uncertainty as to your verdicts, I hand you two pairs of verdicts. Your foreman will sign the one of each pair and bring the
2571 same into court for record, the other of each pair having been destroyed by you. And you will make no other findings than these two. All matters bearing on these two forms you will give due weight thereto, and all matters not having a bearing thereon, you will utterly disregard.

You will observe that one [—] these pairs of verdicts I now hand you is with reference to misbranding. If the flour seized was misbranded in any particular as alleged in the amended libel, your foreman will sign the one thus reciting, but if not misbranded in any particular as alleged in the amended libel, your foreman will sign the other. You will also observe that I hand you a pair of verdicts with reference to adulteration. If the flour seized was adulterated in any one of the ways or methods as alleged in the amended libel, your foreman will sign the one reciting the adulteration; if you do not so find, your foreman will sign the other. You will now take the case.

2572 At the conclusion of the foregoing charge and before the jury retired, the Court called the attention of the jury to the fact that they would take with them the exhibits and the charge of the Court, and the Court, in open court, handed to one of the jurors sitting nearby the bench the said charge. This was done in open court with counsel on both sides all present, except Mr. Smith, who had retired some days before on account of sickness. No objection was made to handing the charge of the Court to the jury, and no exception was taken with reference thereto, and the first objection that the Court has heard with reference to the handing of the charge to the jury was on November 11, 1910, when the motion for new trial was being considered. The charge of the Court was wholly in writing, reduced to typewriting, with a number of manifold copies, the Court retaining the original and handing it to the jury as hereinbefore stated. When the jury was being charged counsel on each side had a manifold copy of the charge, and there was no instruction or charge given to the jury, except that which was reduced to writing, which was read just as it was reduced to writing without comment, change or variation by oral remark.

2573 At the close of the foregoing charge in open court before the jury retired the defendant took the following exceptions to the charge of the Court:

The claimant excepts to that part of the charge of the court to the jury which is as follows:

1. "The statute under which this proceeding was brought and the case now being tried is an enactment of the Congress of the United States aproved by the then President June 30th, 1906 (four years ago.) This statute as to its validity is challenged by the claimant herein. But with that question you have no concern other than to observe it, because the Court holds that the Congress of the United States with the approval of the President had the power under the Constitution of the United States to enact the statute that was enacted and under which we are proceeding, and the Court holds and so directs you that the statute is a valid enactment, and to be enforced in any and all cases where the evidence and the facts come within the wording of the statute."

By the Court. "Exceptions allowed."

The claimant also objects and excepts to that part of the charge given by the Court to the jury which recites as follows:

2. "It will be observed that the statute deals with
2574 drugs, medicines, liquors and foods. A part of the statute is with reference to drugs, medicines and liquors, and likewise confectionery but with which in this case we are not concerned except as the same has a bearing with reference to foods."

By the Court. "Exceptions allowed."

The claimant further objects and excepts to that part of the charge given by the Court to the jury which recites as follows:

3. "While you are the sole judges of the facts and of the testimony, and what weight shall be given thereto regardless of expressions of opinion by me, it is my belief that I can be of substantial aid to you in stating some facts which in my opinion are so well established by the evidence as that you ought to have but little or no argument with reference thereto, and take the same as established facts."

By the Court. "Exceptions allowed."

And in the same connection the claimant objects and excepts to that part of the charge given by the Court to the jury which is as follows:

4. "It is also an established fact in the opinion of the Court that the flour seized and in question was made from wheat of a 1909 crop grown in the State of Nebraska and known by the name of No. 2 Turkey Wheat, and that the wheat was ground at the claimant's mill at Lexington, Nebraska on the

night of March 31st, 1910, and shipped the next day to the said Terry at Castle, Missouri, by whom it was received in about seven days.

By the Court. "Exceptions allowed."

And in the same connection claimant objects and excepts to the charge given by the Court to the jury which recites as follows:

5. "It is also an established fact in the opinion of the Court that the wheat from which the flour was made contained a percentage of what is called yellow berry wheat. The witness, Mr. Tucker, the head miller of claimant, testified that the yellow berry was about or approximately ten to twenty-five per cent, of the entire amount of the entire wheat used to make the flour in question that has been seized
2575 in this case, and the testimony of other millers in Nebraska and Kansas shows that the wheat called "yellow berry" is frequently, indeed commonly, found mixed with turkey wheat as it is grown in those states, and that the percentage of such yellow berry varies frequently running higher than fifty or seventy-five per cent of the turkey wheat produced in various places and communities in said states."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge given by the court to the jury which recites as follows:

6. "It appears that nitrogen-peroxide gas is—in concentration— a brownish or yellowish gas heavier than atmospheric air, of offensive odor, corrosive in character, and a poison and deleterious substance, and if taken by a human being in sufficient quantities will produce poisonous action and death."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which recites as follows:

7. "It appears that when nitrogen-peroxide gas is brought into contact with water or moisture, there is by chemical change produced nitrous acid and nitric acid in equal quantities, and it also appears that each of these acids so produced is a poisonous and deleterious substance which if taken by a human being in sufficient quantities will produce poisonous action and death."

By the Court: "Exceptions allowed."

And the claimant further objects and excepts to that part of the charge of the court to the jury which recites as follows:

8. "It appears that nitrous acid readily combines chemically with other substances such as are contained in wheat flour and thereby forms nitrites of various kinds, depending upon the character of the substances with which the acid chemically combines."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge given by the court to the jury which is as
2576 follows:

9. "It appears that such nitrites as may be formed by the introduction of nitrous acid into flour are poisonous and deleterious substances and that if taken by a human being in sufficient quantities, will produce poisonous action and death."

By the Court: "Exceptions allowed."

And the claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

10. "It appears that nitric acid readily combines chemically with other substances such as are contained in wheat flour, and thereby forms nitrates of various kinds depending upon the character of the substances with which the acid combines."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

11. "It is not incumbent on the government to show that the allegations of the amended libel in a case like this are true beyond a reasonable doubt. Proofs beyond a reasonable doubt are only exacted in a criminal case, and this is not a criminal case within the meaning of that rule, but it is an action in the nature of a civil action."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

12. "It is incumbent on the government to prove that the flour seized was adulterated and misbranded in some respect or particular alleged in the libel. But it need not prove that the flour was adulterated or misbranded in all of the respects and particulars alleged. If it appears from the evidence in this case that the flour was adulterated in any respect or particular alleged, then you must find for the government that the same was adulterated, and if it appears from the evidence that the same was misbranded in any respect or particular al-

leged, then you must find for the government that the same was misbranded."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

13. "I charge you that if the treatment of this flour by
2577 the Alsop process for the purpose of bleaching and whitening resulted in any injury to the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes, that your finding must be for the government that the flour is adulterated."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

14. "On the second branch of this particular issue, I charge you that if you find from the evidence that by the direct action and as a result of the treatment of this flour by the Alsop process the elasticity of the gluten has been lessened or impaired so as to injuriously affect the bread-making qualities of the flour, that your finding must be for the government that this flour is adulterated."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

15. "On the third point of this particular issue, the government claims that the treatment of this flour by the Alsop Process caused substances known as nitrites or nitrite-reacting material to be mixed and packed with the flour so as to reduce, lower and impair its bread-making qualities, and so as to render the same injurious to health. If you shall find from the evidence that the flour seized by such treatment so injured, your findings must be for the government that this flour was adulterated."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

16. "And it further appears that by the lapse of time and aging and conditioning by natural processes wheat flour will improve for a period of time, stated to be from two to four months, or thereabouts, and that such improvement increases the value of the flour and makes it lighter in color; and it further appears that this bleaching process makes the freshly

milled wheat flour appear to be like and to simulate the appearance which that same flour will assume after natural aging and conditioning. And it further appears that this
2578 flour when seized was not naturally aged or conditioned, but was newly milled flour."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

17. "On the second branch of this particular issue, I charge you that if the treatment by the Alsop Process has given to this flour the appearance of a better grade or quality of flour than it really is, you should find for the government that it is adulterated."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

18. "And upon the third branch of this particular issue, I charge you that if you should find from the evidence that this flour is of a grade of flour inferior to patent flour or is a flour inferior to flour made from the first quality hard wheat, and that bleaching by the Alsop Process has caused it to have the appearance either of a patent flour—as that term will be explained to you in this charge—or the appearance of a flour made from the first quality of hard wheat, then you must find for the government that this flour is adulterated."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

19. "The substance of the charge found in the amended libel is that by the treatment of the flour by the Alsop Process it has been caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to-wit: nitrites, nitrite-reacting material, nitrogen peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

20. "On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredient, it may not be condemned unless

it shall further appear that such added substances are
2579 in such quantity that the flour shall be thereby rendered injurious to health."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

21. "And in enforcing the statute in proper cases the fact that it will subject the millers to some expense, or the fact, if it be a fact, that it will enable the millers to market their flour more readily or at a better price, is entitled to no consideration and will receive no weight at your hands."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

22. "The word 'poisonous' as an adjective conveys a descriptive meaning and is used in a qualitative sense, and not in a quantitative sense. That is, it refers to the kind of substance, and not to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause 'which may render such article injurious to health.' It does not say 'which does render such article injurious to health,' but manifestly it was the purpose of Congress to include in this distinction all ingredients of a poisonous character to which in their essential nature, might be ascribed the tendency to affect health injuriously."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

23. "It is not conceivable that the Congress of the United States, when it passed this act, intended that producers and vendors might continue to add poisonous and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the government before proceeding to condemnation of an article of food as adulterated must prove that it contains added poisonous or other added deleterious ingredients in such a quantity as would render such article injurious to health. It is known to every one that there
2580 is no method of ascertaining or measuring the effect of the consumption of such substances in food upon the public health or upon the health of any particular individual."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

24. "It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

25. "The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances. Therefore the court charges you that the government need not prove that this flour or food stuffs made by the use of it would injure the health of any consumer. It is the character—not the quantity— of the added substance, if any, which is to determine this case."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

26. "The flour seized in this case is an article of food within the meaning of the Act of Congress."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

27. "It is admitted that this flour was treated by the Alsop Process for the purpose of bleaching or whitening, and the evidence establishes that nitrogen-peroxide gas was employed for that purpose and further establishes that that gas, nitrous acid, nitric acid, and nitrites of the kind which may be produced by such treatment are poisonous and deleterious substances, and that these substances when taken in sufficient quantities will produce poisonous action or death."

2581 By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

28. "It appears from the evidence in this case that the bleaching process imparts and adds to flour substances referred to in the testimony as nitrites or nitrite-reacting material, and

such substances were imparted to the flour seized in that case by the bleaching process. It further appears from the evidence that such substances so imparted or added to this flour are qualitatively both poisonous and deleterious, that is to say, that these substances are of a poisonous and deleterious character."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

29. "It is well known that wheat flour is not eaten raw. There is evidence in this case that tends to show that during the process of making bread nitrites or nitrite-reacting material contained in the flour is lessened and may be eliminated under some circumstances, but it is also well known that wheat flour is used for the making of other articles of food—biscuits, dumplings, pastry, cake, crackers, gravy, and perhaps other articles of food, which may be consumed by all classes of persons, the young, the old, the sick, the well, the weak, and the strong; and I charge you that it is right for you in reaching your verdict to take these facts into consideration together with all the other proven facts and circumstances in the case."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

30. "With reference to the issue as to misbranding, the same divides itself under two heads, one with reference to quality of the flour, and the other with reference to kind of wheat from which it was made. This flour is branded as a fancy patent flour and it is also represented by label on each sack that the flour is made of first quality hard wheat."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part
2582 of the charge of the court to the jury which is as follows:

31. "It is the law that if the phrase 'patent flour' has a well known and well understood meaning generally among millers flour purchasers, bakers, and in the flour markets of the country, then such meaning as so understood is to be attributed to that phrase. In other words, patent flour is the kind of flour that it is generally understood to be by millers, bakers, flour purchasers and in the markets generally."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

32. "On the second branch of the charge of misbranding contained in the amended libel, the facts appear to be that the flour seized was manufactured by the claimant at its mill from wheat which was raised in the year 1909 in the general vicinity of Lexington, in the State of Nebraska; that the wheat weighed about fifty-nine pounds to the bushel, and was of a variety known as No. 2 Turkey wheat, in which there was a quantity of wheat known as yellow berry or as sometimes called by millers, 'yellow belly', amounting to from ten to twenty-five per cent of the total wheat used to make this flour."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

33. "The wheat known as yellow berry is commonly found in Nebraska and Kansas growing with turkey wheat. It differs in color and quality from pure turkey wheat, and is considered by the millers less desirable and is of less value commercially."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

34. "The words upon each sack, "This flour is made of first quality hard wheat", is in effect a representation that the flour seized was made from the best hard wheat."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

35. "You are to determine whether or not that repre-
2583 sentation is true. And in so doing you will not be controlled by the facts, if it be a fact, that the wheat used was the best grown in the district where claimant procured his supply for milling, but you have a right to consider the same in comparison with other wheats grown in different places and parts of the country as disclosed by the evidence in the case, and in the light of all of the evidence on this question say whether or not the wheat used was in truth and in fact first quality hard wheat."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

36. "In view of statements that have been made by counsel during the progress of this case, you will not consider and you must put to one side all questions of who the counsel are, or where they are from. This is not a contest between states or sections of the country."

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

37. "The fact that the Patent office at Washington, issued a patent for the Alsop Process has nothing to do with the question of branding correctly, or misbranding of flour. The fact that the Patent Office issued a patent for the Alsop Process does not warrant nor authorize the adulteration of flour as made by the Alsop Process, if it is adulterated. All these things must be put to one side, and your verdict must be determined in accordance with the law and facts in the case. It is of no importance to you, nor is it of importance to me, who will be pleased or displeased in this case, whether of counsel, or of the parties, or of any other person. The only question is, What is the right, and what the wrong of this case?"

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

38. "Your verdict must recite whether this flour was misbranded or not, and your verdict must further recite whether this flour was adulterated or not, within the meaning of what I have heretofore said to you."

2584 By the Court: "Exceptions allowed."

39. And the claimant further objects and excepts to that part of the charge of the court to the jury in which two verdicts or findings of facts are required.

By the Court: "Exceptions allowed."

The claimant further objects and excepts to that part of the charge of the court to the jury which is as follows:

40. "You will make no other findings than these two. All matters bearing on these two forms you will give due weight thereto, and all matters not having a bearing thereon, you will utterly disregard."

By the Court: "Exceptions allowed."

41. The claimant further objects and excepts to the ruling of the court in denying the requests for charges heretofore made and filed.

By the Court: "Exceptions allowed."

42. The claimant objects and excepts to the charge of the court as a whole in not submitting all of the issues in the case to the jury and in not submitting verdicts or forms of verdicts on findings on the flour charges in the libel.

To which the court responds that no written requests were made other than as set forth in the seventeen requests presented to the court in writing.

43. The claimant further objects and excepts to the charge as not giving to the jury a definition of poison.

To which the court responds that no requests were made other than the seventeen requests referred to.

44. The claimant further objects and excepts to the charge as a whole because it is based or founded upon the wrong theory of the case and of the law of the case and of the evidence in the case.

By the Court: "Exceptions allowed."

Mr. Lyons: The government desires to renew its motion of the other day requesting the Court to direct the jury peremptorily to return a verdict in favor of the government on account of the flour seized in this case being misbranded
2585 as charged in the libel.

And the Government further desires to renew its motion to the court requesting the court to direct the jury peremptorily to return a verdict for the government in this case to the effect that the flour seized in this case was adulterated as charged in the libel, and excepts to the ruling of the court in refusing to grant the requests of the government.

2586 Thereupon, and on the 5th day of July, 1910, the jury retired to consider of its verdict, and thereafter, on the 6th day of July, 1910, returned into court with the following verdicts, namely:

"We, the jury, find that the flour seized in this case is adulterated.

July 6, 1910.

JOHN W. THOMASON,
Foreman."

"We, the jury, find that the flour seized in this case is misbranded.

July 6, 1910.

JOHN W. THOMASON,
Foreman."

To which action of the jury in returning said verdicts, and to the action and ruling of the court in receiving and filing the same, the claimant and defendant through its attorneys duly objected and excepted at the time, which exceptions were allowed.

Thereupon the court, over the objections and exceptions of the claimant and defendant herein, entered the following judgment in said cause.

"United States of America
No. 285. v.
Six Hundred and Twenty-five (625) Sacks of Flour.

On this day again comes the parties to this cause, Leslie J. Lyons, United States Attorney, and Pierce Butler, Esq., Special Assistant Attorney General, on behalf of the United States, also comes the Lexington Mill and Elevator Company, defendant herein by its counsel, Bruce S. Elliott, Judge A. E. Helm, and Judge E. L. Scarritt, and the jury sworn to try this case as on yesterday, and thereupon the jury came
2587 into court under the charge of the sworn bailiff and returned two verdicts signed by their foreman, which said verdicts are in words and figures following, to-wit:

'In the District Court of the United States, Western District of Missouri, Western Division.

United States of America
No. 285. vs.
Six hundred Twenty-five (625) Sacks of Flour. Lexington Mill and Elevator Company, Claimant.

Verdict.

We, the jury, find that the flour seized in this case is adulterated.

July 6, 1910.

JOHN W. THOMASON,
Foreman.

In the District Court of the United States, Western District of Missouri, Western Division.

United States of America
No. 285. vs.
Six hundred Twenty-five (625) Sacks of Flour. Lexington Mill and Elevator Company, Claimant.

Verdict.

We, the jury, find that the flour seized in this case is misbranded.

July 6, 1910.

JOHN W. THOMASON,
Foreman.

and announced that the same are the verdicts of the jury.

2588 Thereupon, the Court orders said two verdicts and each of them filed and recorded on the records of this court, which is accordingly done, to which the said Claimant, the Lexington Mill and Elevator Company at the time in open Court objects and excepts.

Thereupon, on motion of the United States Attorney, it is ordered, considered and adjudged that the Lexington Mill and Elevator Company pay the taxable costs herein made to be taxed by the Clerk, for which a writ of execution will issue, to which ruling, order and judgment the said Claimant at the time in open court excepts.

It is further considered, ordered and adjudged that the flour seized herein and now in the possession of the United States Marshal for this District, be and the same is hereby condemned and confiscated to the United States of America, as being food adulterated and misbranded within the meaning of the Act of Congress approved June 30, 1906, and that all the same be destroyed by the United States Marshal.

From the foregoing as to the confiscation and destruction is excepted the flour heretofore released by order of the court, to each, all and every of the foregoing orders, directions, judgment, and findings, the Claimant, the Lexington Mill and Elevator Company in open court excepts.

And said Claimant, the Lexington Mill and Elevator Company is given twenty (20) days from this date to file a motion for a new trial, or a motion to modify any or all of the forgoing, and a motion to vacate or set aside any or all of the foregoing, and by the word motion is meant to include any exceptions or objections to any of the foregoing, or all of the same; and also the right and privileges is hereby given to said Claimant to serve and file Bill of Exceptions or notice of

appeal from any or all of said orders within the time allowed by statute and the rules of Court. No process or writ
2589 shall issue until the motion for new trial is ruled on, if filed within said twenty (20) days.

SMITH McPHERSON,
Judge."

And thereafter, on the 22 day of July, 1910, comes the claimant and defendant and by leave of court first had and obtained therefor files its motions for a new trial and for arrest of judgment, which motions for a new trial and in arrest of judgment are in words and figures as follows, to-wit:

2590 In the United States District Court for the Western Division of the Western district of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-Five (625) Sacks of Flour, Lexington Mill & Elevator Company, Claimant.

Claimant's Petition and Motion for a New Trial.

Now on this day comes the claimant, Lexington Mill & Elevator Company, and by leave of court first had and obtained therefor, files this its petition and motion for a new trial herein and prays the court to grant said claimant a new trial of this cause for the following reasons, to-wit:

1. Because the court was without jurisdiction to try this cause.

2. Because the Food and Drugs Act of June 30, 1906, is wholly invalid, unconstitutional and void in that it deprives the claimant of its property without due process of law, and is in violation of Article 1, Section 8, Paragraph 3 of the Constitution of the United States, giving to Congress the right to regulate commerce among the several states, and is also in violation of Article 10 of the Amendments to the Constitution of the United States, which provides that:

"Powers not delegated to the United States by the Constitution nor prohibited by it to the states are reserved to the states respectively, or to the people";

and also in violation of Article 9 of the Amendments to the Constitution of the United States which provides that:

"The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people."

2591 3. Because the said act known as the Food & Drugs Act of June 30, 1906, is wholly illegal, unconstitutional and void for the reason that said act is uncertain and indefinite in that said law does not define any standard of grade, quality or purity, and in this regard delegates legislative functions to the judicial department of the government and to the courts clothed with jurisdiction of cases of a civil or criminal nature brought under said law in violation of Article 1 of the Constitution of the United States, which provides that:

"The legislative powers herein granted shall be vested in a congress of the United States which shall consist of the senate and house of representatives."

4. Because said Food & Drugs Act of June 30, 1906, is wholly illegal and unconstitutional and void in that it deprives this claimant of the exclusive right to the use and enjoyment of a right of property conferred upon it by the government of the United States contrary to and in violation of Clause 8 in Section 8 of Article 1 of the Constitution of the United States which provides that:

"The Congress shall have power to promote the progress of science and useful arts by securing for limited times to authors and inventors (and their grantees) the exclusive right to their respective writings and discoveries."

5. Because the action of the court, and the officers of the court, in seizing and condemning the flour of the claimant was and is contrary to and in violation of the rights of the claimant as secured to it by the provisions of article 4 of the Amendments of the Constitution of the United States which is as follows:

"The right of the people to be secure in their persons, houses, papers and effects against unreasonable searches and seizures shall not be violated, and no warrant shall issue but upon probable cause supported by oath or affirmation and particularly describing the place to be searched and the persons or things to be seized."

6. Because the seizure of said flour by the court and its officers was and is violative of the rights of the claimant
2592 herein as secured to it by the provisions of Article 5 of the Amendments of the Constitution of the United States, which provides that:

"No person shall be deprived of life, liberty or property without due process of law, nor shall private property be taken for public use without just compensation."

7. Because the Food & Drugs Act of June 30, 1906, is unreasonable, oppressive, confiscatory and void, and contrary in its provisions to the principles of a free government and to free people, as enunciated in our Declaration of Rights, in that it attempts to deprive a citizen of property that is harmless and wholesome, and in that it deprives a citizen of the pursuit of happiness and the lawful fruits of his own industry and labor.

8. Because the Food & Drugs Act of June 30, 1906, as construed by the court in this case is unreasonable, oppressive, confiscatory and absolutely void, and contrary in its provisions to the principles of a free government and a free people, as enunciated in our Declaration of Rights, in that it deprives this claimant of its property which, it is conceded in the charge of the court to the jury, is absolutely harmless and wholesome, and in that it deprives this claimant of the right to contract with reference to its own property and to enjoy the lawful fruits of its own capital and labor.

9. Because the Food & Drugs Act of June 30, 1906, is unreasonable, oppressive, confiscatory and void in that by its provisions, as construed by this court, it deprives a citizen of his property in the flour seized and the bread made therefrom, by reason of the claim that said flour and bread contains small or infinitesimal quantities of nitrites or nitrite reacting material, which nitrites or nitrite reacting material is also found in flour and bread manufactured by natural processes, and which flour and bread are, and have been for ages, of universal use for consumption by the human race, and which flour and bread so used in either event are harmless and wholesome.

2593 10. Because the verdict and judgment in this case are unreasonable, oppressive, and confiscatory in that by reason thereof the claimant is deprived of its property which is harmless and wholesome, without compensation, and without any finding or judgment that it is a nuisance or in any way injurious to public health, or that it is in any way affected by nitrites or nitrite reacting material different from flour manufactured by former processes or cured by nature, which has been used for food by the human race since flour was first manufactured.

11. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect that:

"A substance known as nitrites or nitrite reacting material has been mixed and packed with the said flour so as to reduce and lower and injuriously effect its quality and strength, in these respects, among others, namely: that the capacity of the said flour to change and improve, as it would have chang-

ed and improved if aged and conditioned by natural processes, has been destroyed; that by direct action the elasticity of the gluten has been lessened and impaired, so as to injuriously affect the bread-making qualities of the flour; that by direct action other ingredients of the said flour have been injuriously affected, so as to reduce, lower and impair its bread-making qualities."

12. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect that by the treatment of the flour by the Alsop Process,

"The said flour has been mixed, colored and stained in a manner whereby damage and inferiority is concealed in these respects, among others, namely: that the inferiority of freshness or newness, an inferiority which is present in flour made from new wheat or in flour freshly milled from wheat that is either old or new, and an inferiority which manifests itself, among other things, in inferiorities of color, of elasticity of gluten, and of the quality of other ingredients which affect its value for bread-making purposes is thereby concealed; and that said flour has been caused to simulate the appearance of flour made from wheat which has been properly aged and conditioned by natural processes and of flour which has been properly aged and conditioned by natural processes, after being milled from wheat that is either old or new; and this treatment by the Alsop Process, as aforesaid, has concealed the inferiority of said flour, and has given it the appearance of a better grade of flour than it really is."

2594 13. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect:

"That the flour contained in said six hundred and twenty-five (625) sacks, and treated by the Alsop Process as aforesaid, was when milled, and now is, of a grade of flour inferior to a patent flour, and was when milled, and now is, of a grade of flour inferior to the grade known as finest quality of hard wheat; and that the said flour, inferior in these respects, has been caused to have the appearance of a patent flour and of flour made from the finest quality of hard wheat, and thereby the inferiority contained in said flour was and is concealed, and in other respects also the inferiority of said flour was and is concealed."

14. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect:

"That by the treatment (Alsop) as aforesaid the said flour has been caused to contain added poisonous or other added

deleterious ingredients, to-wit, nitrites or nitrite reacting material, which may render said flour injurious to the health."

15. Because there is no substantial evidence in this case to support the allegation of the libel herein to the effect that the flour in question was misbranded within the meaning and intent of the Act of Congress of June 30, 1906.

16. Because the court erred in handing to the jury two verdicts in this case.

17. Because the court erred in instructing the jury to find the issues in accordance with two verdicts in this case.

18. Because the court erred in not charging and instructing the jury to find on each of the four charges or counts alleged in the libel herein.

19. Because the verdicts are inconsistent with each other.

20. Because the court erred in charging the jury peremptorily to find for the government.

21. Because the court erred in finding the facts in his charge to the jury in favor of the government, and in submitting the case under said charge and finding to the jury at all.

2595 22. Because the court erred in entering judgment upon the verdicts as returned by the jury.

23. Because the court erred in taxing the costs herein against the claimant, and in ordering execution therefor.

24. Because the court erred in entering judgment of condemnation or confiscation against the flour seized and ordering the same destroyed by the United States Marshal.

26. Because the court erred in permitting the jury while it was deliberating upon its verdict to have a copy of the charge of the court to the jury, which was in writing, and to consult and argue and interpret and construe the same for itself, all of which was without the knowledge or consent of the claimant or any of its attorneys.

27. Because of the misconduct of the jury in obtaining a copy of the charge of the court to the jury, which was in writing, and using and arguing and interpreting and construing the same while in session deliberating upon the verdict in this case, all of which was without the knowledge or consent of the claimant or any of its attorneys.

28. Because the jury in this case had while it was deliberating upon a verdict herein a copy of the charge of the court, which was in writing, and did use, argue, interpret and con-

strue the same for itself without the presence or aid of the court, and without the knowledge of the claimant or any of its attorneys.

29. The knowledge of the fact that the jury had obtained a copy of the court's charge and used the same while deliberating upon its verdict, did not come to the claimant or any of its attorneys until after the verdict in this case had been rendered and the jury had been discharged.

2596 30. (The claimant and its attorneys ask leave to support the four preceding statements and allegations in this motion by proper affidavits to be hereafter filed.)

31. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The jury are instructed and charged that under the pleadings and all the evidence in this case your verdict must be in favor of the claimant or defendant herein upon all the counts or charges mentioned in the libel herein."

32. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The jury are instructed and charged that there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been mixed and packed with any substance so as to reduce or lower or injuriously affect its quality or strength, and upon that count or charge in the libel your verdict must be in favor of the claimant or defendant herein."

33. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question is mixed, colored, coated or stained in a manner whereby damage or inferiority is concealed.

34. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question contains an added poisonous or other added deleterious ingredient which may render it injurious to health."

35. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been misbranded within the meaning of the Pure Food Act."

36. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

2597 "That the burden of proving the allegations of the libel to be true is upon the prosecution and that before the jury can find against the claimant or condemn the property in question on any of the charges alleged in the libel they must find such charges to be true beyond a reasonable doubt and proven not only by a preponderance of the evidence on the part of the government but to the entire satisfaction of the jury."

37. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the allegations in the libel, that the flour in question has been packed and mixed with a substance known as nitrite or nitrite reacting material and that such substance has been so mixed and packed with the flour as to reduce or lower or injuriously affect its quality or strength, and unless you find that the truth of such allegations has been so proven you cannot find against the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant or defendant."

38. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the allegations in the libel, that the flour in question has been treated by the Alsop Process and that by such treatment the said flour has been mixed, colored and stained in a manner whereby damage and inferiority is concealed, and unless you find that the evidence does so prove that damage and inferiority actually existing in the flour seized in this case has been so concealed by its having been treated by the Alsop Process as alleged in the libel, you cannot find against the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant.

39. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the charge in the libel, that by the treatment of the flour in

question by the said Alsop Process it has been caused to contain added poisonous or other added deleterious ingredients, towit, nitrites or nitrite reacting material, which may render said flour injurious to health:

And in this connection you are further instructed that it is incumbent upon the Government to prove that any such added poisonous or other added deleterious ingredients, if any contained in said flour, are of such a character and contained in the flour seized in such quantities, conditions and amounts as may render said flour injurious to health, and unless you find that all of such facts are so proven you cannot find against the claimant or condemn the flour in question under that charge in the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant."

2598 40. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the allegations in the libel that the flour in question was sold under a distinctive name of another article than itself and was labeled or branded so as to deceive or mislead the purchaser, and that the packages or sacks containing the flour in question, and the labels thereon, bear a statement, design or device regarding the ingredients or substance contained therein, which are false or misleading. And unless you find the truth of such allegations have been so proven you cannot find against the claimant or condemn the flour in question under this charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant of the defendant.

41. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"If unbleached flour or flour that is naturally aged contains nitrites or nitrite reacting material, and that such nitrites or nitrite reacting material are naturally present in such flour in practically the same manner as in the flour seized, then the flour seized cannot be condemned and your verdict on the charge relating to added poisonous or other added deleterious ingredients must be for the claimant or defendant.

42. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The law exempts from its operation poisonous or deleterious ingredients occurring naturally in food products, including flour, and if the jury believe that the nitrites or nitrite re-

acting material is a substance normally and naturally occurring in usual and ordinary food products in amounts the same as or greater than is present in the flour seized, then such nitrites or nitrite reacting material in the seized flour are not poisonous or deleterious within the meaning of the law, and the flour seized may not be condemned."

43. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"If nitrites or nitrite reacting material are usually and ordinarily imparted naturally to the usual and ordinary food products which are continuously used for food consumption without injury to health, then the adding in lesser or no greater amounts of such nitrites or nitrite reacting material by harmless methods to other food products, including flour, is not adding poisonous or other added deleterious ingredients to such food products within the meaning of the law."

2599 44. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The law does not prohibit the adding of nitrites or nitrite reacting material to flour, and a jury cannot find for the government or against the claimant, even if it be shown that nitrites or nitrite reacting material was added to the flour in question, unless they believe from a preponderance of the evidence that such addition, if any, rendered said flour injurious to the health of those who might consume the bread or other foods made from said flour."

45. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"Flour is not eaten in the raw state and if the nitrites or nitrite reacting material present in flour bleached by this Alsop Process is substantially eliminated or greatly reduced during the process of bread making or other process of preparing flour for consumption, the jury may take this fact into consideration in determining as to whether or not the flour contains any substance which may render it injurious to health."

46. Because the court erred in overruling claimant's motion to strike from the files and from the record the amended libel of the government.

47. Because the court erred in admitting in evidence over the objections and exceptions of the claimant the four patents described as government exhibits numbered 1, 2, 3 and 4.

48. Because the court erred in admitting over the objections and exceptions of the claimant special portions of the patents, government exhibits 1, 2, 3 and 4.

49. Because the court erred in admitting and permitting over the objections and exceptions of the claimant the government's counsel to read certain portions of the patents, government exhibits numbered 1, 2, 3 and 4, and to inquire of the witnesses as to whether such portions of said patents so read were true or not true.

50. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses as to the construction, operation, effect and result of the operation of processes for the bleaching of flour other than the Alsop process.

2600 51. Because the court erred in admitting over the objections and exceptions of the claimant incompetent, irrelevant, immaterial, illegal and inadmissible testimony in the case.

52. Because the court erred in admitting over the objection and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the chemical or other effect upon flour of invented processes other than the Alsop Process.

53. Because the court erred in permitting over the objections and exceptions of the claimant the witness Sheppard to testify that his bleaching of flour was not with the Alsop Process but in his own laboratory by nitrogen peroxide gas made by himself.

54. Because the court erred in allowing the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan to testify to their conclusions as to whether or not the flour in question was injurious to health.

55. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sheppard as to his conclusions of the amount of damage inflicted upon the flour in question by the bleaching, as being an invasion of the province of the jury.

56. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel,

Folin, Boos, Child and Sloan as to their conclusions that the flour in question was injurious to health; that inferiority therein was concealed; that the quality and strength thereon was reduced; and that it was misbranded, as being an invasion of the province of the jury.

2601 57. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marsh, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the manner and mode of milling in mills other than the mill of the claimant which milled and produced the flour in controversy.

58. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character, strength, durability and other properties of pipes from mills other than the mill from which the flour in question was produced.

59. Because the court erred in admitting ever the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character and quality of flour other than those produced by the Lexington Mills and Elevator Company.

60. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character and quality of bread made from flour other than the flour produced by the Lexington Mill and Elevator Company.

61. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel,
2602 Folin, Boos, Child and Sloan as to the nature and effect of poisons generally, or poisons and materials other than those mentioned in the libel, namely nitrites or nitrite reacting material.

62. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann,

Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the effect of poisons generally or other material other than nitrites or nitrite reacting material upon the human system.

63. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the effect upon the human system of 53 or 56 different poisonous substances introduced into one meal of victuals to be consumed by a human being.

64. Because the court erred in permitting, over the objections and exceptions of the claimant, the government's counsel to make long, irrelevant, leading and misleading statements and speeches in his questions or interrogatories to the witnesses, which were highly prejudical to the rights of the claimant.

65. Because the court erred in permitting over the objections and exceptions of claimant the counsel for the government to base questions of witnesses upon wrongful and irrelevant assumptions.

66. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann,
Winslow, Ballard, Marshall, Wharton, Hulett, Acree,
2603 Stengel, Folin, Boos, Child and Sloan upon assumptions made by counsel for the government which were not based upon any of the issues in the case, or upon any of the material testimony, and which had no relevancy to the matter in controversy, and which were highly prejudical to the rights of the claimant.

67. Because the court erred in making statements, arguments and giving evidence from the bench in the presence of the jury which were highly prejudical to the rights of the claimant, by reason of which the claimant did not have a fair and impartial trial.

68. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Winton to the effect and in substance that upon the application of the Alsop bleaching process to the flour in his opinion nitrous and nitric acid were added to or mixed with the flour, as an invasion of the province of the jury, and as non-expert testimony.

69. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witnesses

Mitchell to the effect and in substance that the quality and strength of the flour was injured by the used of the Alsop Process, as being an improper conclusion of the witness.

70. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Kempster to the effect and in substance "that the presence in very minute quantities of nitrites in the air, articles of food, ham and vegetables being assumed, how can it be that the adding of nitrites in flour in such quantities as here suggested would be injurious to health", being a mere argument, non-expert testimony, and invading the province of the jury.

71. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of
2604 the witness Mann as to the effect of bleached and unbleached flour on the plant known as drosera, and as to the effect on insects, and of the chart or exhibit exhibited and introduced in evidence with reference thereto, for the reason that such testimony was immaterial to any of the issues in the case and had no bearing upon the questions in controvery or upon the quality or strength, inferiority or superiority, or the effect of said flour upon the health of the consumer.

72. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Ballard to the effect and in substance that he saw a mill at Nashville that tested a bleaching apparatus that Nordyke and Marmon were experimenting with, "I don't know what it was, an agitator was shipped to them and a large jug, a kind of a carboy, but I always thought that was sulphuric acid, but don't know"; and that he had also experimented with fumes of a sulphur candle, for the reason that such testimony was clearly outside the issues of this case and had nothing to do with the flour in this case or the manner in which it was bleached, or what was contained in it.

73. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Ballard that he had seen the Williams Process and experimented with [nitrocele], Dr. Wisner's gas, and was in a mill in Nashville where they experimented with a bottle that came there, but did not know what it was, for the reason that such testimony is not material to any of the issues in this case, a mere expression of the witness' opinion, and entirely hearsay.

74. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the wit-

ness Ballard to the effect and in substance that bleached or unbleached flour won't make as good a loaf of bread as the patent or the bleached flour, and that he has in his possession
2605 packages of unbleached and bleached flours which he offers in evidence, which flour was not bleached in any mill but was bleached in a chemical laboratory not by himself but by some one else, for the reason that the exhibits or samples referred to were bleached under conditions different from those of the Alsop Process, and for the reason that the witness testified that the bleaching effect was different in different conditions, and for the reason that the government had 597 sacks of the flour seized which could have been used, but which was not used by it, for the purpose of ascertaining its constituent parts and its effect upon health.

75. Because the court erred in admitting in evidence over the objections and exceptions of the claimant the testimony of the witness Comstock as to the meaning of the term or brand "fancy patent flour", for the reason that the testimony shows that the term "fancy patent flour" has no particular meaning, is a mere name of a flour put upon the sacks by the miller, and that there is no standard for the same, and it is stating a mere conclusion of the witness.

76. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Gifford to the effect and in substance that the flour seized was not in his opinion really a fancy patent flour made from the first quality of hard wheat, for the reason that the witness was not qualified to answer the question, was an improper conclusion of the witness, because the witness knew nothing of the conditions of wheat in Nebraska and because no standard was shown for the term fancy patent flour.

77. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Graham to the effect and in substance that the bleached flour with an agitator and a little fan on top of the agitator was a [jub] in which he put acid, for the reason that it has no bearing upon the issues in this case, has nothing to do with the
2606 Alsop Process, and throws no light upon the quality or ingredients of the flour in question.

78. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Wolaver to the effect and in substance that yellow berry wheat was not in fact first quality of hard wheat, for the reason that the witness was not qualified to answer, knowing nothing about Kansas and Nebraska wheat, and because it was a mere conclusion of the witness and not a statement of fact.

79. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Westerman to the effect and in substance as follows:

"Mr. Butler: Well, give us the result of your experience, comparing the baking qualities, for cracker making, of bleached flour and flour of like quality, unbleached?

Mr. Smith: Object to this as incompetent, irrelevant and immaterial, and calling for simply a speculative opinion, as to relative merits, which, I think, falls under your Honor's ruling of the relative odor or a relative taste.

The Court: Oh, No; I think not. He may answer.

Mr. Smith: Exception.

Mr. Butler: Yes, tell us how it works, as compared with the other—flavor, odor and taste?

A. I made a test on 1200 pounds of bleached flour and 1200 pounds of unbleached flour, both at the same time, and, after the process of fermentation—

Mr. Helm: (Interrupting) Wait a minute. For the purpose of making an objection, I would like to ask the witness a question, whether or not these flours—

The Witness: (Continuing) After the process of fermentation of both flours, I found that the bleached flour had a dark grey color, and of an inferior flavor to that of the unbleached flour, which had a far superior color, and had the natural flavor of the wheat.

Mr. Helm: I desire to object to this question, the same as I was trying to object to the other, for the reason the witness hasn't shown where these samples of wheat and flour were obtained from—whether the bleached flour and the unbleached flour were produced from like qualities of wheat, by the same mill, or anything else. One is bleached and the other is an unbleached, and they are not identified, and the testimony, so far, shows that there is a great difference, depending upon where the wheat is grown, and its quality, whether it is hard wheat or soft wheat.

The Court: I think that goes to the weight of it, and not the admissibility. He may answer.

Mr. Helm: Save an exception."

2607 80. Because the court erred in overruling, refusing and denying the motion of claimant to strike out all of the testimony upon direct examination of the witness Taggart, to which ruling the claimant excepted, and still excepts, for the

reason that it in no way pertained to the issues made by the pleadings in the case, and that in all his testimony he does not refer in any instance to the flour in question or to the bread made from the flour in question, or to crackers made from the flour in question, and the testimony does not pertain to the flour in question or to the mill or process in question, and is wholly irrelevant and immaterial to any issue in the case.

81. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Albrecht to the effect and in substance that the flour in question is not a fancy patent flour, for the reason that there is no standard fixed or shown for such flour, and that it is a mere conclusion of the witness.

82. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Marshall to the effect and in substance that in his opinion a substance or substances were added to the flour in question by the treatment of the flour by the Alsop Process, for the reason that it is a mere conclusion of the witness without any knowledge as to the Alsop Process, and an invasion of the province of the jury.

83. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Boos to the effect and in substance that upon the assumption that bread made from the flour contained nitrites or nitrite reacting material to the extent shown by the fluid in the tube, exhibit 30, in his opinion there had been a poisonous substance added to the bread by the bleaching of the flour that was seized, for the reason that there is no evidence that the flour in question contained any nitrites to the extent of the fluid in exhibit
2608 30, because the testimony is a mere conclusion of the witness, and is an invasion of the province of the jury to decide the case.

84. Because the court erred in admitting over the objections and exceptions of claimant the question to the witness Boos to the effect and in substance as follows:

"Q. Now, with respect to the adulteration of foods by the addition of poisonous and injurious substance, you may tell us whether or not in your opinion foods may be adulterated by such additions when the consumption of the same may not produce evidence of injury or poisoning manifesting itself by symptoms or apparant effect";

answered in the affirmative, for the reason that it is not responsive to any of the issues in the case, is a mere conclu-

sion of the witness is a mere conclusion of law, and does not refer to the flour in question or the bread made therefrom.

85. For the reason that the court erred in admitting over the objections and exceptions of claimant the question to the witness Boos to the effect and in substance as follows:

"Q. Now, as to power to endure the eating of nitrites in bleached flour bread—would that be constant, or variable?"

for the reason that the witness had said that he didn't know anything about it, that he had never observed any effect or result from the eating of nitrites whatever, except in concentrated form; that it is a mere conclusion of the witness and a conclusion of law.

86. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sloan to the effect and in substance as follows:

"Q. Now Doctor, we want to take your opinion about a hypothetical question which I will ask, and in which I will ask you to assume certain facts. This is a proceeding by the Government to condemn as adulterated certain flour. You may assume to be true that the flour seized, complained of, was bleached by a process known as the Alsop process, which bleaching was affected by treating the flour with nitrogen peroxide gas mixed with atmospheric air to such an extent that the flour was substantially whitened; that upon such treatment the gas coming into contact with the flour and the moisture contained therein, there was formed in that flour two acids, nitric acid and nitrous acid, and there was added
2609 thereto poisonous substances, among them nitrites, organic and inorganic; you may further assume that this flour, and food stuffs made in whole or in part by its use, was by this treatment rendered less digestible than it would have been had it not been so treated; and you may further assume that upon the consumption of bread containing these nitrites so added an effect would be had upon the blood of the consumer depending in extent upon the quantity of nitrites consumed in the bread; that that effect is a chemical one, changing the hemoglobin of the blood to met-hemoglobin, and upon these facts I want to get your opinion as to whether or not the continued and customary use of bread made from such flour would be injurious to the health of consumers or tend to be so injurious?

Judge Scarritt: Just a moment. I object to that, if your Honor please, because the question does not include all the testimony necessary to present the hypothetical question to the witness; further, it is based upon the assumption of opin-

ions of other witnesses, and third, that it invades the province of the jury, and calling for a decision of the issue that is involved in this case.

The Court: Objection is overruled.

To which exceptions were saved.

By Mr. Butler: Go on, doctor, you may answer.

A. In my opinion that would be the tendency.
Q. What would be the tendency, doctor?
A. To be deleterious to health.
Q. Upon what do you base that opinion, either in your experience or professional learning?

Judge Scarritt: I object to that because he has already said that he based it upon the hypothetical question.

Mr. Butler: Well, I mean the reasons for his opinion, of course it assumes the facts.

Judge Scarritt: For the reasons asked in the hypothetical question. When that is answered why as far as he is concerned that ends it. We object to it for that reason.

The Court: You may answer it; go ahead, doctor."

To which ruling exceptions were saved to the whole of the testimony which is incompetent and immaterial for the reasons above stated, and for the reason that the question assumes that there are nitric acid and nitrous acid in the flour, of which there is no proof; that the flour contains organic nitrites, of which there is no proof; that the effect of nitrites so added to the flour upon the blood of the consumer would be to produce met-hemoglobin of which there is no proof; and for the further reason that the witness in his cross examination as follows:

"Q. If any body is suffering from a poison by eating bread three times a day it is apt to be chronic, is it not?
A. Yes, sir.
Q. Now, what are the symptoms of chronic nitrite poisoning? A. That is what I don't know.
Q. Nobody else knows do they? A. No, sir."

2610 87. Because the court erred in refusing of his own motion to permit the jury at the request of the claimant to visit in charge of a bailiff one of the flour mills referred to in the evidence and located in the city in which the case was being tried, for the purpose of inspecting the same and ascertaining for themselves the arrangement and conduct of the process, the smell or lack of smell of the gas, the color or lack

of color of the gas, and the practical effect it had upon the flour while the same was being bleached.

88. Because the court erred in sustaining over the exceptions of claimant the objection of the Government's counsel to the testimony of the witness Leflang to the effect and in substance as follows:

"Q. You may tell the jury whether or not the flour is rendered inferior by this process from what it was before, in your opinion as a miller.

The Court sustained objections to which claimant saved exceptions.

Q. Could you ascertain by inspection whether a flour was inferior after the process from what it was before?

A. Yes, sir.

Q. Was this flour inferior after the process from what it was before? A. It was not."

objection of libelant sustained by the court on the ground that the witness has not shown himself to have any knowledge of this chemical change in the air as applied to the wheat, to which claimant saved exceptions; and for the further reason that this same witness was put upon the stand by the government and was shown to be experienced and qualified as a miller; and for the further reason that questions of the same character were asked by the counsel for the Government of his own witnesses and the objections thereto were overruled by the court.

89. Because the court erred in sustaining the motion of libelant to strike out the testimony of the witness Wesner to the effect and in substance as follows:

2611 "Q. How does the amount of nitrite reacting nitrogen in naturally bleached flour compare with that in commercially bleached flour?

A. Well, it would have been present to the same extent, and even more than what we find in the commercially bleached flour.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: The answer is stricken out as not responsive."

90. Because the court erred in sustaining the objection of the government to the testimony of the witness Wesner to the effect and in substance as follows:

"Q. Is there any difference in the chemical reaction, between natural bleaching, and flour bleached by the Alsop process?

A. I have never been able to find any chemical difference between naturally bleached, and that bleached by the Alsop process.

Q. Now, how have you arrived at this conclusion. Will you tell us, and, if you have made any experiments, you may recite them.

A. Well, in this way: the coloring matter in flour is a distinct chemical body, and it reacts towards oxide of nitrogen, in a certain way. That is, when it combines with these oxides of nitrogen, it loses its yellow color, and it does not make any difference whether the oxide of nitrogen is introduced by the flaming electric arc discharge, or whether the oxide of nitrogen be taken up from the air, by this coloring matter. Now, you take, for example, corn starch. That contains a—

Mr. Butler: (Interrupting) Just wait a minute. I object to that as argumentative, and not responsive to the question asked.

The Court: Yes, just confine your answer to the question.

Mr. Scarritt: He is going over the ground that his (the Government) witnesses went over, if your Honor please, and in the same way.

The Court: The objection is sustained.

Mr. Scarritt: Save an exception."

91. Because the court erred in sustaining the objection of the Government to the testimony of the witness Burgner to the effect and in substance as follows:

"Q. Now do you eat this bread from bleached flour yourself? A. I do.

Q. Do you use it in your family?

Mr. Butler: Oh, I think I will object to that as irrelevant.

The objection was sustained and exceptions saved.

92. Because the court erred in sustaining the objection of the Government to the testimony of the witness Edgecomb to the effect and in substance as follows:

2612 "By Mr. Elliott: Now, I will ask you to tell us what, in your judgment, is the effect on flour of bleaching it.

A. It whitens it in color, and ages the flour.

Q. And what? A. Ages the flour.

Q. Now, tell us what you mean by 'ages the flour'.

A. I mean that, before the use of the Alsop bleacher, we always carried large stocks of flour in the storehouse—

Mr. Butler: I object to that as not responsive to the question and move to strike it out.

The Court: That is not responsive, and is stricken out."

93. Because the court erred in his rulings, and remarks and arguments and statements before the jury at the trial which were to the effect and in substance as follows:

"Q. I will ask you if you have ever had experience in delivering, or giving bleached flour and unbleached flour to bakers? A. Yes, sir.

Q. And if there has been any difference in the way that flour has been received by any bakers, you can tell what it is.

Mr. Butler: Wait a moment. I have understood it to be indicated that we could not go into what the customers said.

The Court: One of the issues in this case is, not whether the customers are satisfied, so much, because it is charged that customers are satisfied by fraudulent methods, to-wit, in the language of the statute: 'If it be mixed, colored, stained, and so forth, in a manner whereby damage or inferiority is concealed', is one of the things charged, and, secondly, where a poisonous ingredient has been inserted; so that the customer, the bread eater—not the bread seller, may be deceived; inferiority may be concealed. That is one of the very issues. A man might hold his trade, and his bakers be absolutely satisfied, but it would be in contravention of the Pure Food Law, if they are satisfied, because they have been deceived, and inferiority is concealed, just as I may get a coat, supposing it to be a Scotch import, and be perfectly satisfied with it, but, upon analysis or investigation, it might be American shoddy. So, how can you make that the test, Mr. Elliott: I may have been satisfied with the bread I was eating, if I knew nothing about the bleached flour process. The inferiority may have been concealed from the ordinary housewife or servant, or the purchaser for the family. They may be perfectly satisfied, but, if inferiority is concealed, or the poison injected, is it not in violation of the Pure Food Law, precisely as my ham that I buy may be loaded with preservatives, or maple sugar that I buy may smell and taste to me like maple sugar, but an analysis may show that it is made out of brown sugar, and yet, the purchaser in the one case is entirely satisfied. So, how are you going to get at it in that way?

Mr. Butler: Let me suggest the further point that it is merest conclusion and hearsay.

The Court: I am simply saying, now, that in my judgment, it is not the test, to show by the miller, or by the baker that, because—

Judge Scarritt: (Interrupting) If your Honor please, we certainly must be permitted to object and except to the statements made by the Court at this time.

The Court: You may take exception, but nevertheless, I will make my statement, just as I understand the law, that, if it comes within either of these provisions of this statute,
2613 then this is contraband. Otherwise, it is not. I mean the two issues that I am now dealing with. There are two other issues. 'If it be mixed, colored, powdered, coated, or stained, in any manner whereby damage or inferiority is concealed,' then it is contraband, and in violation of the Pure Food Law, under which this trial is progressing.

Mr. Scarritt: Now, let me just suggest on that—

The Court: All right. Now, you go on and talk, Judge, and then I will go on.

Mr. Scarritt: I do not want to talk. I just want to suggest that this is one of the ways that your Honor has suggested, two or three times in this trial, that it goes to the question of the weight of the testimony, and not the admissibility of it, because it is one of the ways to determine whether there is inferiority there. People do not generally accept and take inferior things, without making some protest or kick, and this goes to that extent, to show that it is not inferior, that there is nothing concealed, that the superiority of the product is revealed, and not concealed. If everybody is satisfied with a certain thing, and so express themselves, either en masse, or as individuals, why that is testimony going to show that that article, or whatever it is, that meets the public approval, is a superior article, and not an inferior article.

Mr. Butler: The point is this: If the baker is satisfied with it, let us have him here, and we will ask him. If the house wife is satisfied, bring her here, and we will ask her. But, to have a man who is a miller testify by mere hearsay that is does so-and-so, does not appear to me to prove anything.

Mr. Scarritt: Is not the chain complete. The miller affords to the dealer what the dealer necessarily requires for the public consumption.

Mr. Butler: No miller can testify that I am satisfied or dissatisfied as to the flour, without hearsay.

Mr. Scarritt: Yes, he can. It is a matter of notoriety.

Mr. Butler: The miller might want to cheat the person who buys the loaf of bread, and he may want the bleached flour, and still pray for it.

The Court: Just a moment, gentlemen. Here is what I am trying to get at: I have not expressed any views in this case, and do not intend to, as yet, at least, as to what the evidence tends to show: I mention that, in answer to the criticism of Judge Scarritt, but sometime, sooner or later, you have got to get to the issues here, as presented by the statute, two of which issues are: 'If it', in this case meaning flour, 'be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed'; if the verdict is solely under that, one result follows. Another issue that will be submitted to the jury later on, is: 'If it',—meaning flour—'contain any added poisonous or other added deleterious ingredient which may render such article injurious to health'. Now, then, take it under the first one, particularly. Let me illustrate. I may buy or order at the cigar store a Havanna cigar, sold to me as a havanna cigar. I may think it is the finest cigar I have ever got in my life, but it turns out that it was native growth tobacco, one inferior to the other.

Mr. Scarritt: Not necessarily.

The Court: Now, Judge, I would like a good deal if I could talk once without interruption.

Mr. Scarritt: All right, I beg your pardon, your Honor.

2614 The Court: I may be satisfied in any supposed case—I don't care what you take—I may be satisfied, and yet, if the inferiority has been concealed, then it is a fraud, and much like all frauds, the fraud is concealed, otherwise the man would not purchase it. The horse with the heaves or other disorder, is concealed from me; I buy him, would not buy him, but for the concealment of the fraud. Now, the point I am getting at here, is it for the miller to say that the trade is satisfied? That is what I am getting at. The trade may be or may not be satisfied by the very concealment of the inferiority. I am not saying it is inferior. Later on that will be submitted to the jury. Whether new wheat flour, concealed as old flour, sweated in the sack, sweated in the bin, gone through the natural processes, if that is inferior, if that inferiority is concealed by the process, then, is it not in violation of this statute?

Mr. Scarritt: We must object and except in the same way, Your Honor.

The Court: Sir?

Mr. Scarritt: I say, we must object and except, as we did before, to the remarks of the Court at this time.

The Court: Which particular remark?

Mr. Scarritt: The remarks with reference to—

The Court: (interrupting) My reading the statute?

Mr. Scarritt: Reading the statute, and making the argument on this proposition.

The Court: Very well. I repeat, I have not expressed my views about the evidence in this case.

Mr. Scarritt: In this view, your Honor. Your Honor has said we must all keep our minds free from any conclusion, until we get through.

The Court: Yes, sir.

Mr. Scarritt: I think it is perfectly right.

The Court: Yes, sir. I have not expressed it, but I am trying to get back, because, sooner or later, this case is going to be submitted to the jury under the provisions of the statute, to which I will draw specific attention. If inferiority is concealed by the bleaching process, then what follows? If a poisonous gas—if it is poisonous—was injected in this flour, and the flour is made white, then, if that is harmful, and so forth, in the language of the statute, then what? Now, I see you gentlemen are all anxious to make a speech, and I am not anxious to hear you this evening. Court is adjourned until tomorrow morning.

(Thereupon Court was adjourned until ten o'clock A. M., Wednesday, June 22nd, 1910.)"

Which rulings and remarks and statements and arguments were highly prejudicial to the rights of the claimant, and were not germane to the matter under consideration at the time.

94. Because the court erred in his rulings, and remarks, and arguments and statements before the jury at the trial which were to the effect and in substance as follows:

"The Court: When we adjourned last evening, we were talking about certain matters. I do not know whether there was anything further counsel desired to say about that, or not? If there is, I will hear you, briefly.

2615 Mr. Elliott: If your Honor please, I do not want to weary you with this talk, but I merely want to make this observation, because I think my question was not understood. As I understand it, Mr. Butler has been endeavoring to show

that, if a new flour is bleached—that is, flour from new wheat, we will say, is bleached and whitened in color, and, if it possesses, notwithstanding the bleaching, all the properties of a new flour, and is unworkable, a person might buy that flour, thinking it was naturally aged flour, and it had the properties of naturally aged flour, and be deceived. Well, now, let us pass that for a minute. Now, I have been endeavoring to show by this witness that, in his judgment, flour from a new wheat that is bleached, not only is lightened in color, but that its quality is improved, and that it is aged and conditioned. That is what he testified. Now, it seems to me it is germane to that, to show the difference in the way flour has been received by his cusomers, whether it was unbleached or bleached.

The Court: Who do you mean by customers?

Mr. Elliott: The man he has sold it to—the baker, for instance. If he has sold them flour, bleached or unbleached, has there been any difference in the way they have been received, and if so, what? That is what I have been trying to bring out.

Mr. Butler: The last question is: 'If there has been any difference in the way that flour has been received, by any baker, you can state what it is'. Now, maybe the baker paid less for it [that] he would have paid if it had been a naturally aged flour. Maybe it is a matter of adjustment, commercial consideration, and, in any event, it is purely hearsay for him to testify as to the state of mind of a baker, as to this. Let the baker tell how this flour does. Let them say what kind of bread it makes. It is not for a miller to get off, in sweeping remarks, that it gives satisfaction to bakers, or somebody else. Let somebody else who has used it, who knows, say, and some one we can cross-examine. It won't do to bring witnesses here, who do not know anything, and let them give their conclusions, that we cannot cross-examine—matters of hearsay. That might do in a town meeting, but it won't do to try a law suit that way.

The Court: Now, let me say a few things. No one doubts the importance of these matters, and I am not speaking only of the present question. So far as that one question is concerned, it may or may not be pivotal, but, on the 30th day of June, 1906, four years ago, congress, with the approval of President Roosevelt, carried this measure forward into a statute known as the Pure Food and Drugs act. That is the statute under which we are proceeding, and under which this trial is being conducted. That congress had the authority and power to so enact, I have already

adjudicated in another forum, in part, the same parties, perhaps, and, in part, independent parties, but I have an abiding conviction on that question, as expressed in my opinion. I am not speaking as to the reasons for my opinion, but the conclusions. I could better that opinion, I think, if I had the time in which to do it, but I have seen no reason whatever to modify my conclusions as to an interstate shipment like this, from Lexington, Nebraska, to Castle, or Greencastle, or whatever it may be, in Missouri, being an interstate shipment, gives this court jurisdiction to hear and determine the question as to the particular flour now under seizure. This pure food statute seems to me is for the benefit of the consumer, in
2616 this case the bread eater, which comprises the entire human family. This statute is not for the benefit of the baker, or the middleman, not for the miller, nor for the wheat grower. It is for you, and it is for me, and every one else who eats bread, and probably we all do, three times a day, and, quite likely, that is true of the entire human family. Now, this statute is divided into three grand divisions. One is with reference to drugs and medicines, in which a distinct, specific test is made. With that, we are not now dealing. The second division is with reference to confectionery eaten, perhaps by all children, and quite a percentage of adults. That fixes a specific test in not what the confectionery shall contain, but what the confectionery shall not contain. The third and last division, being the one under which we are now proceeding, is with reference to food stuffs, including flour made up into bread, pastry, and so on. Most obviously there could be no specific test made with reference to foods, and the more one thinks about that, the more strongly it grows on him, and it necessarily follows that Congress was compelled to use some general terms in the statute. One is with reference to misbranding. To that, for the present, I shall not allude. But this statute refers in this way, aside from the interstate shipment proposition, which is a question of law 'that, for the purpose of this act, an article shall be deemed to be adulterated', passing by drugs and confectionery, 'in the case of food, first if any substance has been mixed and packed with it, so as to reduce or lower, or injuriously affect its quality or strength'. The pleadings under that clause, present an issue that is now being tried. Passing by the second and third, as not being germane to any inquiry here, the fourth 'if it be mixed,—it meaning flour—'colored, powdered, coated, or'—disjunctive 'or' —'stained in a manner whereby damage or inferiority is concealed'. Now, under that, these pleadings present a distinct issue. Fifth 'If it'—meaning flour, in this case—'contain any added poisonous, or other added deleterious ingredient, which may render such article injurious to health'. Now, there are

the four issues we are trying. First, with reference to misbranding, that I have passed to one side for the time being. Here are the other three.

Mr. Scarritt: Is your Honor charging the jury, now?

The Court: No, sir. I am giving my reasons, being an explanation of my ruling. Why that question, Judge, I do not understand.

Mr. Scarritt: Well, it seems to me it does not appertain to the ruling, as to whether these bakers shall testify as to what effect this flour has. They are part of the community. You cannot exclude them as a part of the community. They are consumers, as well as purchasers.

The Court: My belief is, this statute is for the benefit and protection of consumers.

Mr. Scarritt: I agree with you, and they are consumers. We are all consumers, but it seems to me it is unnecessary at this time, if your Honor please, with all due regard and respect for your Honor, I have to go over the whole ground of this pure food law. That is what occurs to me. It is anticipating the charge to the jury. I say that, because I think that it is my duty to say it in the interest of my clients.

The Court: I was trying to analyze the issues, and what leads up to it.

Mr. Scarritt: I understand, your Honor.

2617 The Court: Now, there are two theories here with reference to the poison. One, by the government, and one by the defendant, concerning which I now have nothing to say, but will, later on, in my charge to the jury. But the question now before the court goes to clause four, which I repeat 'If it'—meaning flour in this case—'be mixed, colored, powdered, coated, or stained, in a manner whereby damage or inferiority is concealed'. Concealed from whom? That is the ultimate question that I am to charge this jury concerning. Now, any evidence on the part of the government that tended to show that inferiority of flour is concealed by the bleaching process, was admissible. Any evidence tending to show that inferiority of flour is not concealed by the bleaching process, is legitimate evidence for the claimants to offer. Now, I am not saying but what you can take it, step by step, and show that the baker is not deceived, or that the inferiority, if there is an inferiority—and that is a question of fact for the jury—I am not saying but that you can show by the baker that the inferiority, if any, is not concealed from him, the baker. The question is, is that enough? I am not now saying. I will cover that in

my final charge to the jury. I am not charging the jury here at all, yet. I am giving the reasons for the analysis I have made in my own mind, of this statute. Therefore, I think you can take, one step at a time, show that if there is any inferiority, that such inferiority is not concealed from the baker, but the question remains, will that be enough? I shall wait for further arguments on that. But I have no doubt in my own mind, at this time, subject to any change of opinion, about it, that this statute is for the benefit of the consumer. Therefore, I will allow this question to be answered.

Mr. Scarritt: If your Honor please, we desire to except to the remarks of the court in making the ruling on this question, and save our exceptions.

The Court: Very well."

Which rulings and remarks and statements and arguments were highly prejudicial to the rights of the claimant, and were not germane to the matter under consideration at the time.

95. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Boettler to the effect and in substance as follows:

"Q. Is there such a thing as eggs preserved with borates?

Mr. Scarritt: We object to that as immaterial.

The Court: Go on.

A. There are preserved eggs, but I don't know what they are preserved with.

Q. Did you ever try preserved eggs, to make cake, with unbleached flour? A. Undoubtedly.

Q. Now, I would like to know where you got those eggs, and how they were preserved?

Mr. Scarritt: We object to this line of testimony, if your Honor please,—immaterial.

The Court: He may answer.

2618 96. The court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sayre to the effect and in substance that the addition of prussic acid to cantaloupe and to coffee and to shredded wheat biscuit and to bacon eaten for breakfast would be injurious to health; for the reason that it has no relation to any of the issues in this case, and was made for the purpose of misleading the jury and prejudicing the rights of the claimant herein.

97. For the reason the court erred in sustaining the motion of libelant's counsel to strike out the testimony of the wit-

ness Abbott to the effect and in substance that deception as to the grade of flour could be practiced as well with the unbleached flour as with the bleached flour.

98. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Teller to the effect and in substance as follows:

"By Mr. Butler:

Q. Is a carload of corn a poisonous substance?

A. Taken in quantity it would be.

Q. Yes, all right. How is this NOCl shipped out, in what commercial volume does Professor John A. Wesener ship that out to millers to bleach flour?

A. I never kept track of that.

Q. Have you seen the carboys there like the compressed soda water drum?

A. I have seen some cylinders, yes.

Judge Scarritt: We object to that as clearly outside of the issues in this case. About nine-tenths of the testimony that has been introduced here is on other things that have no more to do with this flour in question than the man in the moon.

The Court: Objection overruled.

Exception saved.

Q. Now, is a whole drum full of nitroxyl chloride a poisonous substance? A. In concentration it is poisonous.

Q. As shipped out is it a poisonous substance?

The same objection by claimant.

The Court: He may answer.

Exceptions saved."

99. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Albert to the effect and in substance as follows:

2619 "Q. Don't you think it would be a poor policy to put nitrites in baby's food regularly so the mother could not keep it out. I ask you if it would not be poor policy to purposely add nitrites like amyl nitrite, for example, to a baby's foods regularly and habitually and to such an extent that neither baby nor parent could avoid giving the nitrite carrying food to the baby? That, I think, is within the fields of pathology.

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial; invading the province of the jury; and a wrongful conclusion of the witness because there is no amyl nitrite in this flour, improper cross-examination, and simply for the purpose of prejudicing the jury.

The Court: He may answer.

Exceptions saved."

100. Because the court erred in permitting over the objections and exceptions of claimant the question to the witness Webster to the effect and in substance as follows:

By Mr. Butler:

"Q. And cream, now then we will assume that the milkman for the purpose of making his cream or milk stand up a little longer, it is artificial aging he will call it for short, put in a little formaldehyd but so small an amount that the most feeble person in the community might take the milk in ordinary consumption as milk is consumed and that no doctor whether skilled or pharmacologist or toxicologist could observe any harmful effects on the public or the person, whoever it was, from the formaldehyd, in such case from the standpoint of health would you approve or would not disapprove of the addition of the formaldehyd, am I right?";

for the reason that it is absolutely immaterial to any of the issues in this case, and introduced only for the purpose of prejudicing the jury.

101. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Webster to the effect and in substance as follows: That the adding of formaldehyd to milk, sulphates to syrup and borax and coal tar dye to butter, and other ingredients to other substances, and eaten as a breakfast would be poisonous, for the reason that it is immaterial and of no relevancy to any of the issues in the case, and is introduced for the purpose of misleading and prejudicing the jury: and in the same connection also objected and excepted to the remarks of the court to the effect and in substance as follows:

"Q. The Court: Now, Mr. Butler has commenced with the oat meal and cream with some poison in it, but not
2620 enough of itself to hurt, and then he takes pancakes with butter and syrup, then he takes eggs, and he takes bacon, now then, and coffee, now then he finally quits, he finishes all his breakfast, or turns to take some bread and butter, I don't know what else. Now when you get through with an ordinary meal for a healthy man, with a good appetite,

the question is what are you going to have when you get through.

Judge Scarritt: I want to make an objection to the question as stated by the court and by the gentleman on the other side, as absolutely irrelevant, incompetent and immaterial to any of the issue in this case, and involves an analysis of every ingredient in every piece of food that has been mentioned, and the action or comparative action of one poison upon another, or one ingredient upon another, and is an unfair question and an unfair illustration, as applied to the issues in this case with reference to this bleached flour.

The Court: Objection is overruled."

Exceptions saved.

102. Because the court erred in admitting over the objections of claimant the testimony of the witness Webster to the effect and in substance as follows:

"Mr. Butler: Now, if, at the hearing of the bleached flour case in Washington, November, 1908, he (Dr. Wesner) stated in substance:

Mr. Elliott: Now, just in regard to that. We object to this, your Honor, because Doctor Wesner is not here, and there is no possible way of knowing whether that is what Doctor Wesner said, or not.

Mr. Butler: I am going to ask him about his testimony. That is what he said, and you have the transcript, and you will find that at page 277 of the transcript furnished you of that hearing, when you, yourself, were there, taking part in the hearing.

Mr. Scarritt: It don't make any difference who was there. This kind of testimony is not admissible. It is purely hearsay, not an impeaching question, because he didn't ask Doctor Wesner, when he was here, if he said that, and we object to it for those reasons.

The Court: Objection is overruled."

Exceptions saved.

The question was answered.

103. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Webster to the effect and in substance as follows:

"Mr. Butler: But you would say that it was wicked, and sinful, and wrong to add formaldehyd to clean milk that was

being fed to a baby—pure, fresh milk? You would say that was dangerous to the baby's health, and it would be wicked and wrong to do it, wouldn't it?

Mr. Scarritt: We object to that form of question.

The Court: He may answer.

104. Because the court erred in refusing and denying the claimant the right to introduce upon the examination
2621 of the witness Cross the exhibit numbered 281 of gas obtained by him at the Alsop Process mill, mentioned in evidence, and for refusing to allow such exhibit number 281 to be substituted for exhibit number 280, and in the same connection the court erred in the statements and remarks made by him in reference to such exhibits, which were to the effect and in substance as follows:

"Judge Scarritt: We are perfectly willing to let the jury go and see it themselves.

The Court: Judge Scarritt, no use of saying, as has frequently been said, for the jury to go and see it for most obvious reasons to me as a lawyer, for the reason that it cannot be made of record; there is no statutory authority therefor either federal or state that I know anything about. There is nothing for the jury to see if they go there other than what has been described here twenty-five or fifty times, and it will not do for you to say that I am keeping out any evidence, or anything that would enlighten the jury; it would not enlighten the jury, and it could not be made of record if I did allow them to go.

Judge Scarritt: We object and except to the remarks of the court."

105. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Lecount and the witness Schwitzer as to the effect of the introduction of 55 poisons in the food of an ordinary human being in the three meals consumed by such being in a day, as being entirely irrelevant and immaterial to any of the issues in the case.

106. Because the court erred in admitting over the objections and exceptions of the claimant the testimony on rebuttal of the witness Acree for the reason that the same was not proper rebuttal testimony.

107. Because the court erred in not submitting all of the issues in the case to the jury in his charge.

108. Because the court erred in submitting only two forms of verdict to the jury.

109. Because the court erred in not submitting to the jury a form of verdict upon each of the four charges or counts contained in the libel in this case.

2622 110. Because the court erred in charging the jury peremptorily to find for the Government upon all the charges in the libel.

111. Because the charge of the court to the jury has the effect of confiscating claimant's property without authority of law.

112. Because the court's charge to the jury is inconsistent and contradictory.

113. Because the court's charge to the jury does not present all the issues under the evidence.

114. Because the court in his charge to the jury commented upon and emphasized portions of the testimony and evidence favorable to the Government to the exclusion of testimony and evidence favorable to the claimant.

115. Because the court erred in submitting to the jury in its charge inconsistent issues of misbranding and adulteration.

116. Because the court erred in its charge in peremptorily instructing the jury to find the issues for the Government upon both the charge of misbranding and of adulteration, which are inconsistent and contradictory.

117. Because the verdicts of the jury are inconsistent and contradictory.

118. Because the verdicts of the jury as to misbranding and adulteration cannot stand together.

119. Because the verdict and judgment are contrary to law.

120. Because the verdict and judgment are contrary to the weight of the evidence.

121. Because the verdict and judgment are contrary to the law and the evidence.

122. Because upon the whole evidence in this case the 2623 verdict and judgment should have been for the claimant and not for the Government.

123. Because the court erred in instructing and charging the jury as follows:

"The statute under which this proceeding was brought and the case now being tried is an enactment of the Congress of the United States approved by the then President June 30th, 1906, (four years ago). This statute as to its validity is challenged by the claimant herein. But with that question you have no concern other than to observe it, because the Court holds that the Congress of the United States with the approval of the President had the power under the Constitution of the United States to enact the statute that was enacted and under which we are proceeding, and the Court holds and so directs you that the statute is a valid enactment, and to be enforced in any and all cases where the evidence and the facts come within the wording of the statute."

124. Because the court erred in instructing and charging the jury as follows:

"It will be observed that the statute deals with drugs, medicines, liquors and foods. A part of the statute is with reference to drugs, medicines and liquors, and likewise confectionery, but with which in this case we are not concerned except as the same has a bearing with reference to foods."

125. Because the court erred in instructing and charging the jury as follows:

"While you are the sole judges of the facts and of the testimony, and what weight shall be given thereto regardless of expressions of opinion by me, it is my belief that I can be of substantial aid to you in stating some facts which in my opinion are so well established by the evidence as that you ought to have but little or no argument with reference thereto, and take the same as established facts."

126. Because the court erred in instructing and charging the jury as follows:

"It is also an established fact in the opinion of the Court that the flour seized and in question was made from wheat of a 1909 crop grown in the State of Nebraska and known by the name of No. 2 Turkey Wheat, and that the wheat was ground at the claimant's mill at Lexington, Nebraska, on the night of March 31st, 1910, and shipped the next day to the said Terry at Castle, Missouri, by whom it was received in about seven days."

127. Because the court erred in instructing and charging the jury as follows:

"It is also an established fact in the opinion of the Court that the wheat from which the flour was made contained a percentage of what is called Yellow berry wheat. The witness, Mr. Tucker,

the head miller of claimant, testified that the yellow
2624 berry was about or approximately ten to twenty-five per cent of the entire amount of the entire wheat used to make the flour in question that has been seized in this case, and the testimony of the other millers in Nebraska and Kansas shows that the wheat called 'yellow berry' is frequently, indeed commonly found mixed with turkey wheat as it is grown in those states, and that the percentage of such yellow berry varies frequently running higher than fifty or seventy-five per cent of the turkey wheat produced in various places and communities in said states."

128. Because the court erred in instructing and charging the jury as follows:

"It appears that nitrogen-peroxide gas is—in concentration —a brownish or yellowish gas heavier than atmospheric air, of offensive odor, corrosive in character, and a poison and deleterious substance, and if taken by a human being in sufficient quantities will produce poisonous action and death."

129. Because the court erred in instructing and charging the jury as follows:

"It appears that when nitrogen peroxide gas is brought into contact with water or moisture, there is by chemical change produced nitrous acid and nitric acid in equal quantities, and it also appears that each of these acids so produced is a poisonous and deleterious substance which if taken by a human being in sufficient quantities will produce poisonous action and death."

130. Because the court erred in instructing and charging the jury as follows:

"It appears that nitrous acid readily combines chemically with other substances such as are contained in wheat flour and thereby forms nitrites of various kinds, depending upon the character of the substances with which the acid chemically combines.

131. Because the court erred in instructing and charging the jury as follows:

"It appears that such nitrites as may be formed by the introduction of nitrous acid into flour are poisonous and deleterious substances and that if taken by a human being in sufficient quantities, will produce poisonous action and death."

132. Because the court erred in instructing and charging the jury as follows:

"It appears that nitric acid readily combines chemically with other substances such as are contained in wheat flour, and thereby forms nitrates of various kinds depending upon the character of the substances with which the acid combines."

133. Because the court erred in instructing and charging the jury as follows:

2625 "It is not incumbent on the government to show that the allegations of the amended libel in a case like this are true beyond a reasonable doubt. Proofs beyond a reasonable doubt are only exacted in a criminal case, and this is not a criminal case within the meaning of that rule, but it is an action in the nature of a civil action."

134. Because the court erred in instructing and charging the jury as follows:

"It is incumbent on the government to prove that the flour seized was adulterated and misbranded in some respect or particular alleged in the libel. But it need not prove that the flour was adulterated or misbranded in all of the repects and particulars alleged. If it appears from the evidence in this case that the flour was adulterated in any respect or particular alleged, then you must find for the government that the same was adulterated, and if it appears from the evidence that the same was misbranded in any respect or particular alleged, then you must find for government that the same was misbranded."

135. Because the court erred in instructing and charging the jury as follows:

"I charge you that if the treatment of this flour by the Alsop process for the purpose of bleaching and whitening resulted in any injury to the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes, that your finding must be for the government that the flour is adulterated."

136. Because the court erred in instructing and charging the jury as follows:

"On the second branch of this particular issue, I charge you that if you find from the evidence that by the direct action and as a result of the treatment of this flour by the Alsop process the elasticity of the gluten has been lessened or impaired so as to injuriously affect the bread-making qualities of the flour, that your finding must be for the government that this flour is adulterated."

137. Because the court erred in instructing and charging the jury as follows:

"On the third point of this particular issue, the government claims that the treatment of this flour by the Alsop Process caused substances known as nitrites or nitric reacting material to [by] mixed and packed with the flour so as to reduce, lower and impair its bread-making qualities, and so as to render the same injurious to health. If you shall find from the evidence that the flour seized was by such treatment so injured, your finding must be for the government that this flour was adulterated."

138. Because the court erred in instructing and charging the jury as follows:

2626 "And it further appears that by the lapse of time and aging and conditioning by natural processes wheat flour will improve for a period of time, stated to be from two to four months, or thereabouts, and that such improvement increases the value of the flour and makes it lighter in color; and it further appears that this bleaching process makes the freshly milled wheat flour appear to be like and to simulate the appearance which that same flour will assume after natural aging and conditioning. And it further appears that this flour when seized was not naturally aged or conditioned, but was newly milled flour."

139. Because the court erred in instructing and charging the jury as follows:

"On the second branch of this particular issue, I charge you that if the treatment by the Alsop Process has given to this flour the appearance of a better grade or quality of flour than it really is, you should find for the government that it is adulterated."

140. Because the court erred in instructing and charging the jury as follows:

"And upon the third branch of this particular issue, I charge you that if you should find from the evidence that this flour is of a grade of flour inferior to patent flour or is a flour inferior to flour made from the first quality hard wheat, and that bleaching by the Alsop Process has caused it to have the appearance either of a patent flour—as that term will be explained to you in this charge—or the appearance of a flour made from the first quality of hard wheat, then you must find for the government that this flour is adulterated."

141. Because the court erred in instructing and charging the jury as follows:

"The substance of the charge found in the amended libel is that by the treatment of the flour by the Alsop Process it has been caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to-wit: nitrites, nitrite-reacting material, nitrogen peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances."

142. Because the court erred in instructing and charging the jury as follows:

"On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredient, it may not be condemned unless it shall further appear that such added substances are in such quantity that the flour shall be thereby rendered injurious to health."

143. Because the court erred in instructing and charging the jury as follows:

"And in enforcing the statute in proper cases the fact that it will subject the millers to some expense, or the fact, if
2627 it be a fact, that it will enable the millers to market their flour more readily or at a better price, is entitled to no consideration and will receive no weight at your hands."

144. Because the court erred in instructing and charging the jury as follows:

"The word 'poisonous' as an adjective conveys a descriptive meaning and is used in a qualitative sense, and not in a quantitative sense. That is, it refers to the kind of substance, and not to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause 'which may render such article injurious to health.' It does not say 'Which does render such article injurious to health,' but manifestly it was the purpose of Congress to include in this distinction all ingredients of a poisonous character to which in their essential nature, might be ascribed the tendency to affect health injuriously."

145. Because the court erred in instructing and charging the jury as follows:

"It is not conceivable that the Congress of the United States, when it passed this act, intended that producers and vendors might continue to add poisonous and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the government before proceed-

ing to condemnation of an article of food as adulterated must prove that it contains added poisonous or other added deleterious ingredient in such a quantity as would render such article injurious to health. It is known to every one that there is no method of ascertaining or measuring the effect of the consumption of such substances in food upon the public health or upon the health of any particular individual."

146. Because the court erred in instructing and charging the jury as follows:

"It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances."

147. Because the court erred in instructing and charging the jury as follows:

"The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances? Therefore the court charges you that the government need not prove that this flour or food stuffs made by the use of it would injure the health of any consumer. It is the character—not the quantity—of the added substance, if any, which is to determine this case."

148. Because the court erred in instructing and charging the court as follows:

2628 "The flour seized in this case is an article of food within the meaning of the Act of Congress."

149. Because the court erred in instructing and charging the jury as follows:

"It is admitted that this flour was treated by the Alsop Process for the purpose of bleaching or whitening, and the evidence establishes that nitrogen-peroxide gas was employed for that purpose and further establishes that that gas, nitrous acid, nitric acid, and nitrites of the kind which may be produced by such treatment are poisonous and deleterious substances, and that these substances when taken in sufficient quantities will produce poisonous action or death."

150. Because the court erred in instructing and charging the jury as follows:

"It appears from the evidence in this case that the bleaching process imparts and adds to flour substances referred to in the testimony as nitrites or nitrite-reacting material, and such

substances were imparted to the flour seized in this case by the bleaching process. It further appears from the evidence that such substances so imparted or added to this flour are qualitatively both poisonous and deleterious, that is to say, that these substances are of a poisonous and deleterious character."

151. Because the court erred in instructing and charging the jury as follows:

"It is well known that wheat flour is not eaten raw. There is evidence in this case that tends to show that during the process of making bread nitrites or nitrite-reacting material contained in the flour is lessened and may be eliminated under some circumstances, but it is also well known that wheat flour is used for the making of other articles of food—biscuits, dumplings, pastry, cake, crackers, gravy, and perhaps other articles of food, which may be consumed by all classes of persons, the young, the old, the sick, the well, the weak, and the strong; and I charge you that it is right for you in reaching your verdict to take these facts into consideration together with all the other proven facts and circumstances in the case.

152. Because the court erred in instructing and charging the jury as follows:

"With reference to the issue as to misbranding, the same divides itself under two heads, one with reference to quality of the flour, and the other with reference to kind of wheat from which it was made. The flour is branded as a fancy patent flour and it is also represented by label on each sack that the flour is made of first quality hard wheat."

153. Because the court erred in instructing and charging the jury as follows:

"It is the law that if the phrase 'patent flour' has a well known and well understood meaning generally among
2629 millers, flour purchasers, bakers, and in the flour markets of the country, then such meaning as so understood is to be attributed to that phrase. In other words, patent flour is the kind of flour that it is generally understood to be by millers, bakers, flour purchasers and in the markets generally."

154. Because the court erred in instructing and charging the jury as follows:

"On the second branch of the charge of misbranding contained in the amended libel, the facts appear to be that the flour seized was manufactured by the claimant at its mill from wheat which was raised in the year 1909 in the general vicinity of Lexington, in the State of Nebraska; that the wheat

weighed about fifty-nine pounds to the bushel, and was of a variety known as No. 2 Turkey wheat, in which there was a quantity of wheat known as yellow berry or as sometimes called by millers, 'yellow belly', amounting to from ten to twenty-five per cent of the total wheat used to make this flour."

155. Because the court erred in instructing and charging the jury as follows:

"The wheat known as yellow berry is commonly found in Nebraska and Kansas growing with turkey wheat. It differs in color and quality from pure turkey wheat, and is considered by the millers less desirable and is of less value commercially."

156. Because the court erred in instructing and charging the jury as follows:

"The words upon each sack, 'this flour is made of first quality hard wheat', is in effect a representation that the flour seized was made from the best hard wheat."

157. Because the court erred in instructing and charging the jury as follows:

"You are to determine whether or not that representation is true. And in so doing you will not be controlled by the facts, if it be a fact, that the wheat used was the best grown in the district where claimant procured his supply for milling, but you have a right to consider the same in comparison with other wheats grown in different places and parts of the country as disclosed by the evidence in the case, and in the light of all of the evidence on this question say whether or not the wheat used was in truth and in fact first quality hard wheat."

158. Because the court erred in instructing and charging the jury as follows:

"In view of statements that have been made by counsel during the progress of this case, you will not consider and you must put to one side all questions of who the counsel are, or where they are from. This is not a contest between states or section of the country."

159. Because the court erred in instructing and charging the jury as follows:

2630 "The fact that the Patent Office at Washington issued a patent for the Alsop Process has nothing to do with the question of branding correctly, or misbranding of flour. The fact that the Patent Office issued a patent for the Alsop Process does not warrant nor authorize the adulteration of flour as made by the Alsop Process, if it is adulterated. All

these things must be put to one side, and your verdict must be determined in accordance with the law and facts in the case. It is of no importance to you, nor is it of importance to me, who will be pleased or displeased in this case, whether of counsel or of the parties, or of any other person. The only question is, What is the right, and what the wrong of this case?"

160. Because the court erred in instructing and charging the jury as follows:

"Your verdict must recite whether this flour was misbranded or not, and your verdict must further recite whether this flour was adulterated or not, within the meaning of what I have heretofore said to you."

161. Because the court erred in its charge to the jury in submitting two verdicts or findings of fact for the jury to sign and return.

162. Because the court erred in instructing and charging the jury as follows:

"You will make no other findings than these two. All matters bearing on these two forms you will give due weight thereto, and all matters not having a bearing thereon, you will utterly disregard."

163. Because the court erred in refusing to charge the jury as requested by the claimant and defendant in written requests heretofore filed.

164. Because the court erred in its charge to the jury in not submitting all the issues of the case to the jury, and in not submitting forms of verdicts on the four charges in the libel.

165. Because the court erred in its charge to the jury by not giving the jury in such charge a definition of poison or poisonous.

166. Because the court erred in its charge to the jury in submitting to the jury therein a wrong theory of the case and of the law of the case and of the evidence in the case.

167. Because the court erred in admitting over the objections and exceptions of the claimant, and in overruling claimant's objection thereto, the testimony of the witness Sheppard to the effect and in substance as follows:

"By Mr. Butler:

Q. Will you give us the result of your study with respect to the amount of damage to the gluten of the flour re-
2631 sulting from the use of various amounts of this nitrogen peroxide gas employed by the Alsop Process?

A. Yes, sir, I took the same flours and some unbleached and some bleached.

(The witness proceeding with a long statement as to the effect of nitrites upon flours.)

By Mr. Elliott: Your Honor, for the purpose of an objection I would like to ask this witness how was this flour bleached that you were talking about?

A. I bleached it myself.
Q. With what? A. With nitrogen peroxide.
Q. Did you bleach it with the Alsop machine?
A. Not with the Alsop machine.
Q. I will ask you if you have analyzed the gas of the Alsop machine and if you know the proportion of peroxide in it to [add]? A. No, I have not.

Mr. Elliott: Then I object, your Honor, to this testimony because it is not the process that was used by the claimant in bleaching his flour and it is not germane to any—I mean effects that Professor Sheppard got bleaching in his laboratory with pure gas, is not germane to what the Lexington Mill did, using the Alsop Process.

Witness: Mr. Elliott, first, one word of explanation.

The Court: Just wait a minute. Objection is overruled and the claimant excepts."

Upon the foregoing grounds and for the foregoing reasons the claimant prays the court to grant it a new trial of this cause.

ED P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant.

W. C. Scarritt,
A. M. Seddon,
Of Counsel.

2632 In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill & Elevator Company, Claimant.

Motion in Arrest of Judgment.

Comes the claimant and defendant in the above entitled cause and prays the court to arrest the judgment herein for the reasons following, to-wit:

1. Because the libel herein does not state facts sufficient to constitute a cause of action in favor of the United States of America and against the defendant.

2. Because the law under which this action is brought is unconstitutional, oppressive, confiscatory and void.

3. Because under the libel, the evidence and the law as declared by the court, this court has no jurisdiction to render the judgment herein.

4. Because under the pleadings and evidence herein the verdict and judgment should have been for the claimant and defendant and not for the plaintiff.

5. Because the verdict and judgment are contrary to law.

ED P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant and Defendant.

W. C. Scarritt,
A. M. Seddon,
Of Counsel.

2633 Theretofore, on the 22nd day of July, 1910, the court made and entered the following order in said cause:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill & Elevator Company, Claimant.

Order.

"Now on this day it is ordered that the claimant and defendant herein have until on or before the first day of November, 1910 within which to bring on for hearing the motions for new trial and in arrest of judgment, filed herein by leave of court, and have until on or before said date to prepare and file a bill of exceptions herein, with leave to file affidavits in support of motion for new trial within ten days from this date."

Whereupon and thereafter on the said 22nd day of July, 1910, the said claimant filed herein said affidavits in support of said motion for a new trial; which said affidavits so filed are in words and figures following, to-wit:

2634 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
vs.
Six Hundred Twenty-Five Sacks of Flour. Lexington Mill & Elevator Company, Claimant.

Affidavit in support of motion for new trial.

State of Missouri,
County of Jackson—ss.

Bruce S. Elliott, A. E. Helm and Edward L. Scarritt, of lawful age, being duly sworn, upon their respective oaths state that they were the attorneys and counsel for the claimant and defendant in the above entitled cause, and as such counsel were engaged in the trial of said cause from the empanelling of the jury to and including the entry of the final judgment of the court therein; that Edward P. Smith was one of the attorneys for the claimant and defendant in said cause, but that said Edward P. Smith was by reason of illness forced to leave the trial of said cause before the return of the verdict and entry of judgment therein;

That it is the understanding of these affiants, and such has been their information, that when the jury in said cause retired to consider the verdicts therein they were permitted and allowed to take with them to the jury room a purported written copy of the charge of the court delivered to the jury therein; that said purported written copy of the charge of the court to the jury was taken by the jury to their room without the consent or knowledge of any of these affiants; and it is the belief and information of these affiants that the jury read, discussed and interpreted said purported written
2635 copy of the charge of the court to the jury during their deliberations and before arriving at their verdicts in said cause.

BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT.

City of St. Louis,
State of Missouri—ss.

Subscribed and sworn to by Bruce S. Elliott, before me a notary public within and for said city and state this July 22nd, 1910. My commission expires June 20th, 1912.

(Seal) ADOLPH ABBEY,
Notary Public.

State of Kansas,
Sedgwick County—ss.

Subscribed and sworn to by A. E. Helm, before me, a notary public within and for Sedgwick County, State of Kansas, this 20th day of July, 1910. My commission expires Nov. 17, 1913.

(Seal) J. W. SMYTH,
Notary Public.

State of Missouri,
County of Jackson—ss.

Subscribed and sworn to by E. L. Scarritt before me this 23rd day of July, 1910. My com. expires May 6th, 1912.

(Seal) ALFRED M. SEDDON,
Notary Public for Jackson,
County, Missouri.

2636 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
No. 285. vs.
Six Hundred Twenty-Five Sacks of Flour. Lexington Mill & Elevator Company, Claimant.

Affidavit in support of motion for new trial.

State of Missouri,
County of Jackson—ss.

Henry C. Crow, of lawful age, being duly sworn, upon his oath states that he was one of the jurors composing the jury in the above entitled cause, which jury returned two separate verdicts in said cause on the 6th day of July, 1910.

That upon retiring to the jury room to consider their verdicts in said cause the jury was possessed of a purported typewritten copy of the charge of the court read by the court to the jury in said cause; that said purported typewritten copy of the charge was read a number of times by the jurors and was argued, commented upon, construed and interpreted by them in arriving at their verdicts in said cause; that said jurors interpreted and understood said charge to be

peremptory and to mean that the jury should return a verdict against the claimant and defendant in said cause both upon the question of misbranding and upon the question of adulteration and that the jury interpreted said charge to instruct them to find peremptorily against said claimant and defendant upon both the charges of misbranding and adulteration; that had not said charge peremptorily instructed the jury to find against the claimant and defendant, the jury would not have found against said claimant and defendant and their ver-
2637 dicts in said cause would not have been in favor of the government.

HENRY C. CROW.

Subscribed and sworn to before me a notary public in and for said county and state this 20th day of July, 1910. My Commission expires May 6-1912.

(Seal) ALFRED M. SEDDON,
Notary Public.

2638 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-Five Sacks of Flour, Lexington Mill & Elevator Company, Claimant.

Affidavit in Support of Motion for New Trial.

State of Missouri,
County of Jackson—ss.

R. R. Jenkins, of lawful age, being duly sworn, upon his oath states that he was one of the jurors composing the jury in the above entitled cause, which jury returned two separate verdicts in said cause on the 6th day of July, 1910.

That upon retiring to the jury room to consider their verdicts in said cause the jury was possessed of a purported typewritten copy of the charge of the court read by the court to the jury in said cause; that said purported typewritten copy of the charge was read a number of times by the jurors and was argued, commented upon, construed and interpreted by them in arriving at their verdicts in said cause; that said jurors interpreted and understood said charge to be peremptory and to mean that the jury should return a verdict against the claimant and defendant in said cause both upon the question of misbranding and upon the question of adulteration, and that the jury interpreted said charge to instruct them to find peremptorily against said claimant and defendant upon both the charges of misbranding and adulteration; that had not said

charge peremptorily instructed the jury to find against the claimant and defendant the jury would not have found against said claimant and defendant, and their verdicts in said cause would not have been in favor of the government.

R. R. JENKINS.

2639 Subscribed and sworn to before me a notary public in and for said county and state this 20th day of July, 1910. My commission expires May 6th, 1912.

(Seal) ALFRED M. SEDDON,
Notary Public.

2640 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-Five Sacks of Flour, Lexington Mill & Elevator Company, Claimant.

Affidavit in Support of Motion for New Trial.

State of Missouri,
County of Jackson—ss.

J. C. Graves, of lawful age, being duly sworn, upon his oath states that he was one of the jurors composing the jury in the above entitled cause, which jury returned two separate verdicts in said cause on the 6th day of July, 1910.

That upon retiring to the jury room to consider their verdicts in said cause the jury was possessed of a purported typewritten copy of the charge of the court read by the court to the jury in said cause; that said purported typewritten copy of the charge was read a number of times by the jurors and was argued, commented upon, construed and interpreted by them in arriving at their verdicts in said cause, that said jurors interpreted and understood said charge to be peremptory and to mean that the jury should return a verdict against the claimant and defendant in said cause both upon the question of misbranding and adulteration, and that the jury interpreted said charge to instruct them to find peremptorily against said claimant and defendant upon both the charges of misbranding and adulteration; that had not said charge peremptorily instructed the jury to find against the claimant and defendant the jury would not have found against said claimant and defendant, and their verdicts in said cause would not have been in favor
2641 of the government.

J. C. GRAVES.

Subscribed and sworn to before me a notary public in and for said county and sate this 20th day of July, 1910. My commission expires May 6th, 1912.

(Seal) ALFRED M. SEDDON,
Notary Public.

2642 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
vs.
Six Hunderd and Twenty-Five Sacks of Flour.
Lexington Mill & Elevator Company, Claimant.

Affidavit in Support of Motion for New Trial.

State of Missouri,
County of Jackson—ss.

Thomas T. Arnette, of lawful age, being duly sworn, upon his oath states that he was one of the jurors composing the jury in the above entitled cause, which jury returned two separate verdicts in said cause on the 6th day of July, 1910.

That upon retiring to the jury room to consider their verdicts in said cause the jury was possessed of a purported typewritten copy of the charge of the court read by the court to the jury in said cause; that said purported typewritten copy of the charge was read a number of times by the jurors and was argued, commented upon, construed and interpreted by them in arriving at their verdicts in said cause; that said jurors interpreted and understood said charges to be peremptory and to mean that the jury should return a verdict against the claimant and defendant in said cause both upon the question of misbranding and upon the question of adulteration, and that the jury interpreted said charge to instruct them to find peremptorily against said claimant and defendant upon both the charges of misbranding and adulteration; that had not said charges peremptorily instructed the jury to find against the claimant and defendant the affiant would not have found against said claimant and defendant with respect to the flour seized in this case and this affiant would not have voted
2643 in favor of the government.

THOMAS T. ARNETTE.

Subscribed and sworn to before me a notary public in and for said county and state this 20th day of July, 1910. My commission expires May 6, 1912.

(Seal) ALFRED M. SEDDON,
Notary Public.

2644 Thereafter on said 22nd day of July, 1910, the claimant herein by and through its attorneys notified the plaintiff by and through its attorneys that an appeal would be taken herein on the part of defendant and claimant, to the United States Circuit Court of Appeals from the final decree herein, which notice was in writing and duly accepted by said plaintiff which notice was and is in the following words and figures, to-wit:

In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
vs.
Six Hunderd and Twenty-Five Sacks of Flour.
Lexington Mill & Elevator Company, Claimant.

To Leslie J. Lyons, District Attorney, and Pierce Butler, Special Attorney General, Attorneys and Proctors for Libelant, and Howard N. McCreary, Clerk of the District Court of the United States for the Western District of Missouri:

Sirs:

Take notice that the claimant and defendant above named hereby appeal by writ of error or appeal, or both, to the United States Circuit Court of Appeals for the Eighth Circuit from the final decree entered herein on July 6th, 1910.

Dated at Kansas City, Missouri, this 22 day of July 1910.

E. P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys and Proctors for Claimant and Defendant.

Copy accepted this July 22, 1910.
Leslie J. Lyons,
U. S. Attorney.

2645 Thereafter and on the 14th day of October, 1910, the following stipulation was made, signed and filed herein by the parties hereto at the suggestion of the clerk and upon the request of the court, as follows:

In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
vs.
Six Hunderd and Twenty-Five Sacks of Flour.
Lexington Mill & Elevator Company, Claimant.

It is hereby agreed by and between the United States by Leslie J. Lyons, United States Attorney, and the said claimant and defendant by E. L. Scarritt, one of its attorneys, that the exhibits introduced in this case, and now in the custody of the Clerk of this Court, to-wit, all exhibits of bread and products of flour which are perishable, may be by the said Clerk destroyed, and in the event of a writ of error or appeal herein to any appellate court, this agreement shall not be prejudical to any party by reason of the said exhibits not being certified up, but the same shall be considered as certified up, and substitutes therefor may be used if desired by either party in any appellate court.

Witness our hands this October 14, 1910.

LESLIE J. LYONS,
United States Attorney.

E. L. SCARRITT,
Attorney for Defendant.

Approved:
SMITH MCPHERSON, Judge.

2646 And thereafter, on October 14th, 1910, the court made, signed and filed and had duly entered of record herein the following order, to-wit:

In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
vs.
Six Hundred and Twenty-Five Sacks of Flour.
Lexington Mill & Elevator Company, Claimant.

Order.

It is hereby ordered that the time heretofore given by the Court to the defendant and claimant to call up motion for a new trial and to file its bill of exceptions herein, is hereby, for good cause shown, extended until January first, 1911.

2647 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
No. 285. vs.
625 Sacks of Flour, Lexington Mill and Elevator Company, Claimant.

Now comes the libellant on this 11th day of November, 1910, in open court and at the hearing of the objections to the judgment herein and the motion for new trial herein, and consents and prays that the judgment heretofore entered herein be modified as follows:

By striking out of said judgment the paragraph thereof commencing with the words, "It is further considered" and ending with the words "and that all of the same be destroyed by the United States Marshal", and by inserting in lieu thereof the following:

"It is further considered, ordered and adjudged that the flour seized herein and now in the custody of the United States Marshal for this district was transported in interstate comference from Lexington, Nebraska, to Castle, in this district, in the State of Missouri, where the same was found after having been so transported, and that all the same was at all of the times mentioned in the pleadings herein and still is liable to be proceeded against in this district, and that the same was seized by process of libel for condemnation, while all of the same remained unsold and in original unbroken packages; that all of the flour so seized and now in the custody of the said Marshal
was at all said times and still is an article of food and
2648 was and still is adulterated and misbranded within
the meaning of the Act of Congress approved June 30, 1906, known as "The Food and Drugs Act", and that all thereof now remaining in the hands of the marshal be and the same is hereby condemned as being adulterated and misbranded within the meaning of said act, and that the same be disposed of by the Marshal by sale—not however, in any jurisdiction contrary to the provisions of this act or the laws of that jurisdiction—and that the proceeds thereof, less the legal costs and charges be paid into the Treasury of the United States; provided, however, that upon the payment of costs of such libel proceedings herein and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of said act, or the laws of any state, territory or district, or insular possession, all of the same be delivered to the owner thereof, the Lexington Mill and Elevator Company."

And the said libellant consents that said judgment may be modified as respects the flour seized in any manner and to any extent desired by claimant herein, or its counsel, so long as said judgment shall not be made contrary to or inconsistent with the verdict of the jury herein.

The libellant objects to receiving in evidence the affidavits filed herein as follows, namely:

That certain affidavit purporting to be signed and sworn to by Bruce S. Elliott, A. E. Helm and E. L. Scarritt; that certain affidavit purporting to be signed and sworn to by juror Henry C. Crow; that certain affidavit purporting to have been signed and sworn to by juror R. R. Jenkins; that certain affidavit purporting to have been signed and sworn to by juror J. C. Graves; that certain affidavit purporting to have been signed and sworn to by juror Thomas T. Arnette. All of said affidavits bear date of July 22, 1910, and were filed herein; on
2649 the ground that all of said affidavits and each of them is incompetent, irrelevant and immaterial and inadmissible to impeach, modify, explain or define the verdicts and findings of the jury herein, and upon the ground and for the reason that the charge of the court to the jury herein was wholly in writing, and was read in its entirety by the court to the jury in open court and in the presence of counsel, after the court had handed to counsel of the parties respectively, a complete copy of such charge, and for the reason that such written charge was immediately upon the completion of the reading thereof by the court to the jury handed to the jury by the court or under its direction, in open court, openly, and in the presence of counsel for the parties respectively, and for the reason that no objection thereto was made by counsel on either side or by any other person.

Dated November 11, 1910.

LESLIE J. LYONS,
PIERCE BUTLER,
Attorneys for Libellant.

Nov. 11, 1910.

Indorsed: Filed by libellant. Filed November 11, 1910. Howard N. McCreary, Clerk.

2650 In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America,
No. 285. vs.
625 Sacks of Flour, Lexington Mill and Elevator Company, Claimant.

Now comes the libellant by its attorneys, in open court at the hearing of the application of claimant for the settlement of a bill of exceptions herein, and objects to the settlement or allowance of the same upon the grounds and for the reasons following, that is to say:

(1) That that part of the proposed bill of exceptions which purports to be a transcript of the testimony offered, objections, rulings and proceedings at the trial, is not complete or in sub-

stance substantially true and accurate in many particulars, which counsel for the libellant are now unable to particularly specify herein, for the reason that they have not, nor has either of them, had any opportunity to examine the same or compare it with a transcript of such proceedings which was made at the time of the trial by the court reporter at the request of libellant, or to compare the same with the original stenographic notes taken by such reporter.

(2) That before this bill of exceptions be settled there be inserted therein immediately following the charge of the court to the jury a statement correctly and accurately setting forth the facts with respect to the manner of charging the jury, and among other things stating that the charge was wholly in writing; that it was read in its entirety to the jury, and
2651 that the court before reading it to the jury handed a copy thereof to counsel on each side of the case, and that immediately after concluding the reading thereof, in open court, in the presence of all the counsel, handed or caused to be handed, to the jury the very same charge and all thereof so read by the court to the jury, and that no objection thereto was made by the attorneys for the Claimant or by anyone else.

(3) That if a bill of exceptions be settled that Claimant's proposed exception No. 42 be not allowed.

That Claimant's proposed exception No. 43 be not allowed.

That the judgment or copy thereof contained in the proposed bill of exceptions be not included in any bill of exceptions.

That the Claimant's petition and motion for new trial contained in the proposed bill of exceptions be not allowed, or contained in any bill of exceptions.

That the motion in arrest of judgment contained in Claimant's proposed bill of exceptions be not allowed or included in any bill of exceptions.

That the affivavit of Bruce S. Elliott, A. E. Helm, and E. L. Scarritt be not allowed or included in any bill of exceptions.

That the affidavits of the four jurors, Henry C. Crow R. R. Jenkins, J. C. Graves and Thomas R. Arnette be not allowed or included in any bill of exceptions.

That the copy of notice that Claimant appeals by writ of error or appeal, or both, to the United States Circuit Court of Appeals from the final decree herein be not allowed or included in any bill of exceptions.

That the stipulation between the attorneys, dated October 14, 1910, approved by the Judge be not included in any
2652 bill of exceptions.

That the order of the court allowing defendant and claimant until January 1, 1911, to call up motion for new trial and fiile bill of exceptions be not included in any bill of exceptions.

LESLIE J. LYONS,
PIERCE BUTLER,
Attorney for Libellant.

Nov. 11, 1910.

Indorsed: Filed by libellant November 11, 1910. Howard N. McCreary, Clerk.

2653 Thereafter, on the 11th day of November, 1910 the motions for new trial and in arrest of judgment herein having been submitted to the court, the same were by the court overruled, to which rulings of the court in overruling said motion for a new trial and said motion in arrest, and each of them, and each separate ground and reason therein contained and set forth, the claimant and defendant at the time excepted, and still excepts, which exceptions were allowed.

Thereupon it was ordered by the court that the claimant and defendant have until on or before the first day of January, 1911, to prepare and file its bill of exceptions herein, and that the time heretofore granted for said purpose be extended until that date; and that the amount of the supersedeas bond to be filed herein by the claimant and defendant is fixed at $2,500.00, and the same may be filed with a responsible surety company as surety, on or before the date last above mentioned.

Wherefore, the claimant and defendant, the Lexington Mill & Elevator Company, prays that this, its bill of exceptions in four volums to the ruling and holdings and decisions and judgments of the court may be allowed, signed and sealed and filed and made a part of the record in this cause, which is accordingly done this 11th day of November, 1910.

SMITH McPHERSON (Seal)
United States District Judge of the Western Division of the Western District of Missouri at Kansas City.

Approved Nov. 11, 1910. William G. Graves for Mr. Butler.

2654 The Petition for Writ of Error, filed November 11th, 1910, is in words and figures as follows, to-wit:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill and Elevator Company, Claimant.

Petition for Writ of Error.

Now comes the Lexington Mill and Elevator Company, claimant and defendant herein, and respectfully shows to the court that at the April Term 1910 of this court, and on the sixth day of July, 1910, a verdict was rendered and a judgment and decree entered in this case for the government, and for the condemnation, confiscation and destruction of the six hundred and twenty-five sacks of flour seized herein, and for the costs of this case to be paid by the said claimant, the Lexington Mill and Elevator Company; that said claimant and defendant, the Lexington Mill and Elevator Company, within the time specially designated by order of court after the return of said verdict and the rendering of said judgment filed motions herein for a new trial and in arrest of judgment, and said motions were at the November Term of said court, to which term they had been regularly continued for hearing, and upon the 11th day of November, 1910, overruled by the court, to which action of the court in overruling said motions and each of them, the said claimant and defendant duly excepted at the time, and still excepts, which exceptions were allowed. There is
2655 attached hereto as a part hereof an assignment of errors; and there is also presented herewith a proper supersedeas bond.

Wherefore, the said claimant and defendant, the Lexington Mill and Elevator Company, prays that a writ of error be allowed to review said cause and said judgment and decree in the United States Circuit Court of Appeals for the Eighth Judicial Circuit.

ED. P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant and Defendant.

W. C. Scarritt,
A. M. Seddon,
Of Counsel.

Allowed this 11th day of November, 1910.

SMITH McPHERSON,
United States District Judge for the Western Division of the Western District of Missouri.

2656 The Assignment of Errors, filed November 11th, 1910, is in words and figures as follows, to-wit:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill and Elevator Company, Claimant and Defendant.

Assignment of Errors.

Now comes the Lexington Mill and Elevator Company, a corporation, claimant and defendant in the above entitled cause, and presents this its assignment of errors as a part of its petition for a writ of error, and respectfully shows that the District Court aforesaid at the trial of the above entitled cause erred in each of the following rulings and holdings, and that error was committed by said court in said proceedings, in the following respects, and upon the following grounds and for the following reasons, to-wit:

1. Because the court was without jurisdiction to try this cause.

2. Because the Food and Drugs Act of June 30, 1906 is wholly invalid, unconstitutional and void in that it deprives the claimant of its property without due process of law, and is in violation of Article 1, Section 8, Paragraph 3 of the Constitution of the United States, giving to Congress the right to regulate commerce among the several states, and is also in violation of Article 10 of the Amendments to the Constitution of the United States, which provides that:

"Powers not delegated to the United States by the Constitution nor prohibited by it to the states are reserved to the states respectively, or to the people";

and also in violation of Article 9 of the Amendments to the Constitution of the United States which provides that;

"The enumeration in the Constitution of certain rights shall not be construed to deny or disparage others retained by the people."

2657 3. Because the said act known as the Food & Drugs Act of June 30, 1906 is wholly illegal, unconstitutional and void for the reason that said act is uncertain and indefinite in that said law does not define any standard of grade, quality or purity, and in this regard delegates legislative functions to the judicial department of the government and to the courts clothed with jurisdiction of cases of a civil or criminal

nature brought under said law in violation of Article 1 of the Constitution of the United States, which provides that:

"The legislative powers herein granted shall be vested in a Congress of the United States which shall consist of the senate and house of representatives."

4. Because said Food & Drugs Act of June 30, 1906, is wholly illegal and unconstitutional and void in that it deprives this claimant of the exclusive right to the use and enjoyment of a right or property conferred upon it by the government of the United States contrary to and in violation of Clause 8 in Section 8 of Article 1 of the Constitution of the United States which provides that;

"The Congress shall have power to promote the progress of science and useful arts by securing for limited times to authors and inventors (and their grantees) exclusive right to their respective writings and discoveries."

5. Because the action of the court, and the officers of the court, in seizing and condemning the flour of the claimant was and is contrary to and in violation of the rights of the claimant as secured to it by the provisions of article 4 of the Amendments of the Constitution of the United States which is as follows:

"The right of the people to be secure in their persons, houses, papers and effects against unreasonable searches and seizures shall not be violated, and no warrant shall issue but upon probable cause supported by oath or affirmation and particularly describing the place to be searched and the persons or things to be seized."

6. Because the seizure of said flour by the court and its officers was and is violative of the rights of the claim-
2658 ant herein as secured to it by the provisions of Article 5 of the Amendments of the Constitution of the United States, which provides that:

"No person shall be deprived of life, liberty or property without due process of law, nor shall private property be taken for public use without just compensation."

7. Because the Food & Drugs Act of June 30, 1906, is unreasonable, oppressive, confiscatory and void, and contrary in its provisions to the principles of a free government and a free people, as enunciated in our Declaration of Rights, in that it attempts to deprive a citizen of property that is harmless and wholesome, and in that it deprives a citizen of the pursuit of happiness and the lawful fruits of his own industry and labor.

8. Because the Food & Drugs Act of June 30, 1906, as construed by the court in this case is unreasonable, oppressive, confiscatory and absolutely void, and contrary in its provisions to the principles of a free government and a free people, as enunciated in our Declaration of Rights, in that it deprives this claimant of its property which, it is conceded in the charge of the court to the jury, is absolutely harmless and wholesome, and in that it deprives this claimant of the right to contract with reference to its own property and to enjoy the lawful fruits of its own capital and labor.

9. Because the Food & Drugs Act of June 30, 1906, is unreasonable, oppressive, confiscatory and void in that by its provisions, as construed by this court, it deprives a citizen of his property in the flour seized and the bread made therefrom, by reason of the claim that said flour and bread contains small or infinitesimal quantities of nitrites or nitrite reacting material which nitrites or nitrite reacting material is also found in flour and bread manufactured by natural processes, and which flour and bread are, and have been for ages, of universal use for consumption by the human race, and which flour and bread so used in either event are harmless and wholesome.

2659 10. Because the verdict and judgment in this case are unreasonable, oppressive, and confiscatory in that by reason thereof the claimant is deprived of its property which is harmless and wholesome, without compensation, and without any finding or judgment that it is a nuisance or in any way injurious to public health, or that it is in any way affected by nitrites or nitrite reacting material different from flour manufactured by former processes or cured by nature, which has been used for food by the human race since flour was first manufactured.

11. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect that:

"A substance known as nitrites or nitrite reacting material has been mixed and packed with the said flour so as to reduce and lower and injuriously effect its quality and strength, in these respects, among others, namely: that the capacity of the said flour to change and improve, as it would have changed and improved if aged and conditioned by natural process, has been destroyed; that by direct action the elasticity of the gluten has been lessened and impaired, so as to injuriously affect the bread-making qualities of the flour; that by direct action other ingredients of the said flour have been injuriously

affected, so as to reduce, lower and impair its bread-making qualities."

12. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect that by the treatment of the flour by the Alsop Process,

"The said flour has been mixed, colored and stained in a manner whereby damage and inferiority is concealed in these respects, among others, namely: that the inferiority of freshness or newness an inferiority which is present in flour made from new wheat or in flour freshly milled from wheat that is either old or new, and an inferiority which manifests itself, among other things, in inferiorities of color, of elasticity of gluten, and of the quality of other ingredients which affect its value for bread-making purposes is thereby concealed; and that said flour has been caused to simulate the appearance of flour made from wheat which has been properly aged and conditioned by natural processes and of flour which has been properly aged and conditioned by natural processes, after being milled from wheat that is either old or new; and this treatment by the Alsop Process, as aforesaid, has concealed the inferiority of said flour, and has given it the appearance of a better grade of flour than it really is."

2660 13. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect:

"That the flour contained in said six hundred and twenty-five (625) sacks, and treated by the Alsop Process as aforesaid, was when milled, and now is, of a grade of flour inferior to a patent flour, and was when milled, and now is, of a grade of flour inferior to the grade known as finest quality of hard wheat; and that the said flour, inferior in these respects, has been caused to have the appearance of a patent flour and of flour made from the finest quality of hard wheat, and thereby the inferiority contained in said flour was and is concealed, and in other respects also the inferiority of said flour was and is concealed."

14. Because there is no substantial or probative evidence in this case to support the allegation of the libel herein to the effect:

"That by the treatment (Alsop) as aforesaid the said flour has been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, which may render said flour injurious to the health."

15. Because there is no substantial evidence in this case to support the allegation of the libel herein to the effect that

the flour in question was misbranded within the meaning and intent of the Act of Congress of June 30, 1906.

16. Because the court erred in handing to the jury two verdicts in this case.

17. Because the court erred in instructing the jury to find the issues in accordance with two verdicts in this case.

18. Because the court erred in not charging and instructing the jury to find on each of the four charges or counts alleged in the libel herein.

19. Because the verdicts are inconsistent with each other.

20. Because the court erred in charging the jury peremptorily to find for the government.

21. Because the court erred in finding the facts in his charge to the jury in favor of the government, and in submitting the case under said charge and finding to the jury at all.

2661 22. Because the court erred in entering judgment upon the verdicts as returned by the jury.

23. Because the court erred in taxing the costs herein against the claimant, and in ordering execution therefor.

24. Because the court erred in entering judgment of condemnation or confiscation against the flour seized and ordering the same destroyed by the United States Marshall.

26. Because the court erred in permitting the jury while it was deliberating upon its verdict to have a copy of the charge of the court to the jury, which was in writing, and to consult and argue and interpret and construe the same for itself, all of which was without the knowledge or consent of the claimant or any of its attorneys.

27. Because of the misconduct of the jury in obtaining a copy of the charge of the court to the jury, which was in writing, and using and arguing and interpreting and construing the same while in session deliberating upon the verdict in this case, all of which was without the knowledge or consent of the claimant or any of its attorneys.

28. Because the jury in this case had while it was deliberating upon a verdict herein a copy of the charge of the court, which was in writing, and did use, argue, interpret and construe the same for itself without the presence or aid of the court, and without the knowledge of the claimant or any of its attorneys.

29. The knowledge of the fact that the jury had obtained a copy of the court's charge and used the same while deliberating upon its verdict, did not come to the claimant or any of its attorneys until after the verdict in this case had been rendered and the jury had been discharged.

2662 30. (The claimant and its attorneys ask leave to support the four preceding statements and allegations in this motion by proper affidavits to be hereafter filed.)

31. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The jury are instructed and charged that under the pleadings and all the evidence in this case your verdict must be in favor of the claimant or defendant herein upon all the counts or charges mentioned in the libel herein."

32. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The jury are instructed and charged that there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been mixed and packed with any substance so as to reduce or lower or injuriously affect its quality or strength, and upon that count or charge in the libel your verdict must be in favor of the claimant or defendant herein."

33. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question is mixed, colored, coated or stained in a manner whereby damage or inferiority is concealed.

34. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question contains an added poisonous or other added deleterious ingredient which may render it injurious to health."

35. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question has been misbranded within the meaning of the Pure Food Act."

36. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

2663 "That the burden of proving the allegations of the libel to be true is upon the prosecution and that before the jury can find against the claimant or condemn the property in question on any of the charges alleged in the libel they must find such charges to be true beyond a reasonable doubt and proven not only by a preponderance of the evidence on the part of the government but to the entire satisfaction of the jury."

37. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the allegations in the libel, that the flour in question has been packed and mixed with a substance known as nitrite or nitrite reacting material and that such substance has been so mixed and packed with the flour as to reduce or lower or injuriously affect its quality or strength, and unless you find that the truth of such allegations has been so proven you cannot find against the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant or defendant."

38. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the allegations in the libel, that the flour in question has been treated by the Alsop Process and that by such treatment the said flour has been mixed, colored and stained in a manner whereby damage and inferiority is concealed, and unless you find that the evidence does so prove that damage and inferiority actually existing in the flour seized in this case has been so concealed by its having been treated by the Alsop Process as alleged in the libel, you cannot find against the claimant or condemn the flour in question under that charge of the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant.

39. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the truth of the charge in the libel, that by the treatment of the flour in question by the said Alsop Process it has been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, which may render said flour injurious to health:

And in this connection you are further instructed that it is incumbent upon the Government to prove that any such added poisonous or other added deleterious ingredients, if any contained in said flour, are of such a character and contained in the flour seized in such quantities, conditions and amounts as may render said flour injurious to health, and unless you find that all of such facts are so proven you cannot find against the claimant or condemn the flour in question under that charge in the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant."

2664 40. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"That the burden is upon the prosecution to prove the allegations in the libel that the flour in question was sold under a distinctive name of another article than itself and was labeled or branded so as to deceive or mislead the purchaser, and that the packages or sacks containing the flour in question, and the labels thereon, bear a statement, design or device regarding the ingredients or substance contained therein, which are false or misleading. And unless you find the truth of such allegations have been so proven you cannot find against the claimant or condemn the flour in question under this charge of the libel, and if you fail to so find your verdict upon such count or charge in the libel must be in favor of the claimant or the defendant."

41. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"If unbleachd flour or flour that is naturally aged contains nitrites or nitrite reacting material, and that such nitrites or nitrite reacting material are naturally present in such flour in practically the same manner as in the flour seized, then the flour seized cannot be condemned and your verdict on the charge relating to added poisonous or other added deleterious ingredients must be for the claimant or defendant."

42. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The law exempts from its operation poisonous or deleterious ingredients occurring naturally in food products, including flour, and if the jury believe that the nitrites or nitrite reacting material is a substance normally and naturally occurring in usual and ordinary food products in amounts the same as or greater than is present in the flour seized, then such nitrites or nitrite reacting material in the seized flour are not poisonous or deleterious within the meaning of the law, and the flour seized may not be condemned."

43. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"If nitrites or nitrite reacting material are usually and ordinarily imparted naturally to the usual and ordinary food products which are continuously used for food consumption without injury to health, then the adding in lesser or no greater amounts of such nitrites or nitrite reacting material by harmless methods to other food products, including flour, is not adding poisonous or other added deleterious ingredients to such food products within the meaning of the law."

2665 44. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"The law does not prohibit the adding of nitrites or nitrite reacting material to flour, and a jury cannot find for the government or against the claimant, even if it be shown that nitrites or nitrite reacting material was added to the flour in question, unless they believe from a preponderence of the evidence that such addition, if any, rendered said flour injurious to the health of those who might consume the bread or other foods made from said flour."

45. Because the court erred in refusing and denying the request of claimant to charge the jury as follows:

"Flour is not eaten in the raw state and if the nitrites or nitrite reacting material present in flour bleached by this Alsop Process is substantially eliminated or greatly reduced during the process of bread making or other process of preparing flour for consumption, the jury may take this fact into consideration in determining as to whether or not the flour contains any substance which may render it injurious to health."

46. Because the court erred in overruling claimant's motion to strike from the files and from the record the amended libel of the government.

47. Because the court erred in admitting in evidence over the objections and exceptions of the claimant the four patents described as government exhibits numbered 1, 2, 3 and 4.

48. Because the court erred in admitting over the objections and exceptions of the claimant special portions of the patents, government exhibits 1, 2, 3 and 4.

49. Because the court erred in admitting and permitting over the objections and exceptions of the claimant the government's counsel to read certain portions of the patents, government exhibits numbered 1, 2, 3 and 4, and to inquire of the

witnesses as to whether such portions of said patents so read were true or not true.

50. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses as to the construction, operation, effect and result of the operation of processes for the bleaching of flour other than the Alsop process.

2666 51. Because the court erred in admitting over the objections and exceptions of the claimant incompetent, irrelevant, immaterial, illegal and inadmissible testimony in the case.

52. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the chemical or other effect upon flour of invented processes other than the Alsop Process.

53. Because the court erred in permitting over the objections and exceptions of the claimant the witness Sheppard to testify that his bleaching of flour was not with the Alsop Process but in his own laboratory by nitrogen peroxide gas made by himself.

54. Because the court erred in allowing the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan to testify to their conclusions as to whether or not the flour in question was injurious to health.

55. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sheppard as to his conclusions of the amount of damage inflicted upon the flour in question by the bleaching, as being an invasion of the province of the jury.

56. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to their conclusions that the flour in question was injurious to health; that inferiority therein was concealed; that the quality and strength thereon was reduced; and that it was misbranded, as being an invasion of the province of the jury.

2667 57. Because the court erred in admitting over the objections and exceptions of the claimant the testimony

of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the manner and mode of milling in mills other than the mill of the claimant which milled and produced the flour in controversy.

58. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character, strength, durability and other properties of pipes from mills other than the mill from which the flour in question was produced.

59. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character and quality of flours other than those produced by the Lexington Mill and Elevator Company.

60. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the character and quality of bread made from flours other than the flour produced by the Lexington Mill and Elevator Company.

61. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree,
2668 Stengel, Folin, Boos, Child and Sloan as to the nature and effect of poisons generally, or poisons and materials other than those mentioned in the libel, namely nitrites or nitrite reacting material.

62. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Stengel, Folin, Boos, Child and Sloan as to the effect of poisons generally or other material other than nitrites or nitrite reacting material upon the human system.

63. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree, Sten-

gel, Folin, Boos, Child and Sloan as to the effect upon the human system of 53 or 56 different poisonous substances introduced into one meal of victuals to be consumed by a human being.

64. Because the court erred in permitting, over the objections and exceptions of the claimant, the government's counsel to make long, irrelevant, leading and misleading statements and speeches in his questions or interrogatories to the witnesses, which were highly prejudicial to the rights of the claimant.

65. Because the court erred in permitting over the objections and exceptions of claimant the counsel for the government to base questions of witnesses upon wrongful and irrelevant assumptions.

66. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witnesses Sheppard, Winton, Mitchell, Kempster, Jones, Mann, Winslow, Ballard, Marshall, Wharton, Hulett, Acree,
2669 Stengel, Folin, Boos, Child and Sloan upon assumptions made by counsel for the government which were not based upon any of the issues in the case, or upon any of the material testimony, and which had no relevancy to the matter in controversy, and which were highly prejudicial to the rights of the claimant.

67. Because the court erred in making statements, arguments and giving evidence from the bench in the presence of the jury which were highly prejudicial to the rights of the claimant, by reason of which the claimant did not have a fair and impartial trial.

68. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Winton to the effect and in substance that upon the application of the Alsop bleaching process to the flour in his opinion nitrous and nitric acid were added to or mixed with the flour, as an invasion of the province of the jury, and as non expert testimony.

69. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Mitchell to the effect and in substance that the quality and strength of the flour was injured by the use of the Alsop Process, as being an improper conclusion of the witness.

70. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Kempster to the effect and in substance "that the pres-

ence in very minute quantities of nitrites in the air, articles of food, ham and vegetables being assumed, how can it be that the adding of nitrites in flour in such quantities as here suggested would be injurious to health", being a mere argument, non expert testimony, and invading the province of the jury.

71. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of
2670 the witness Mann as to the effect of bleached and unbleached flour on the plant known as drosera, and as to the effect on insects, and of the chart or exhibit exhibited and introduced in evidence with reference thereto, for the reason that such testimony was immaterial to any of the issues in the case and had no bearing upon the questions in controversy or upon the quality or strength, inferiority or superiority, or the effect of said flour upon the health of the consumer.

72. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Ballard to the effect and in substance that he saw a mill at Nashville that tested a bleaching apparatus that Nordyke and Marmon were experimenting with, "I don't know what it was, an agitator was shipped to them and a large jug, a kind of a carboy, but I always thought that was sulphuric acid, but don't know"; and that he had also experimented with fumes of a sulphur candle, for the reason that such testimony was clearly outside the issues of this case and had nothing to do with the flour in this case or the manner in which it was bleached, or what was contained in it.

73. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Ballard that he had seen the Williams Process and experimented with nitrocele, Dr. Wisner's gas, and was in a mill in Nashville where they experimented with a bottle that came there, but did not know what it was, for the reason that such testimony is not material to any of the issues in this case, a mere expression of the witness opinion, and entirely hearsay.

74. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Ballard to the effect and in substance that bleached or unbleached flour won't make as good a loaf of bread as the patent or the bleached flour, and that he has in his pos-
2671 session packages of unbleached and bleached flours which he offers in evidence, which flour was not bleached in any mill but was bleached in a chemical laboratory not by himself but by some one else, for the reason that the exhibits or samples referred to were bleached under conditions differ-

ent from those of the Alsop Process, and for the reason that the witness testified that the bleaching effect was different in different conditions, and for the reason that the government had 597 sacks of the flour seized which could have been used, but which was not used by it, for the purpose of ascertaining its constituent parts and its effect upon health.

75. Because the court erred in admitting in evidence over the objections and exceptions of the claimant the testimony of the witness Comstock as to the meaning of the term or brand "fancy patent flour", for the reason that the testimony shows that the term "fancy patent flour" has no particular meaning, is a mere name of a flour put upon the sacks by the miller, and that there is no standerd for the same, and it is stating a mere conclusion of the witness.

76. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Gifford to the effect and in substance that the flour seized was not in his opinion really a fancy patent flour made from the first quality of hard wheat, for the reason that the witness was not qualified to answer the question, was an improper conclusion of the witness, because the witness knew nothing of the conditions of wheat in Nebraska and because no standard was shown for the term fancy patent flour.

77. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Graham to the effect and in substance that he bleached flour with an agitator and a little fan on top of the agitator a [jub] in which he put acid, for the reason that it has
2672 no bearing upon the issues in this case, has nothing to do with the Alsop Process, and throws no light upon the quality or ingredients of the flour in question.

78. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Wolaver to the effect and in substance that yellow berry wheat was not in fact first quality of hard wheat, for the reason that the witness was not qualified to answer, knowing nothing about Kansas or Nebraska wheat, and because it was a mere conclusion of the witness and not a statement of fact.

79. Because the court erred in admitting over the objection and exceptions of claimant the testimony of the witness Westerman to the effect and in substance as follows:

"Mr. Butler: Well, give us the result of your experience, comparing the baking qualities, for cracker making, of bleached flour and flour of like quality, unbleached?

Mr. Smith: Object to this as incompetent, irrelevant and immaterial, and calling for simply a speculative opinion, as to relative merits, which, I think, falls under your Honor's ruling of the relative odor or a relative taste.

The Court: Oh, no; I think not. He may answer.

Mr. Smith: Exception.

Mr. Butler: Yes, tell us how it works, as compared with the other—flavor, odor and taste?

A. I made a test on 1200 pounds of bleached flour and 1200 pounds of unbleached flour, both at the same time, and, after the process of fermentation—

Mr. Helm: (Interrupting) Wait a minute. For the purpose of making an objection, I would like to ask the witness a question, whether or not these flours—

The Witness: (Continuing) After the process of fermentation of both flours, I found that the bleached flour had a dark grey color, and of an inferior flavor to that of the unbleached flour, which had a far superior color, and had the natural flavor of the wheat.

Mr. Helm: I desire to object to this question, the same as I was trying to object to the other, for the reason the witness hasn't shown where these samples of wheat and flour were obtained from—whether the bleached flour and the unbleached flour were produced from like qualities of wheat, by the same mill, or anything else. One is bleached, and the other is an unbleached, and they are not identified, and the testimony, so far, shows that there is a great difference, depending upon where the wheat is grown, and its quality, whether it is hard wheat or soft wheat.

The Court: I think that goes to the weight of it, and not the admissibility. He may answer.

Mr. Helm: Save an exception."

2673 80. Because the court erred in overruling, refusing and denying the motion of claimant to strike out all of the testimony upon direct examination of the witness Taggart, to which ruling the claimant excepted, and still excepts, for the reason that it in no way pertained to the issues made by the pleadings in the case, and that in all his testimony he does not refer in any instance to the flour in question or to the bread made from the flour in question or to crackers made from the flour in question, and the testimony does not pertain to the flour in question or to the mill or process in question, and is wholly irrelevant and immaterial to any issue in the case.

81. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Albrecht to the effect and in substance that the flour in question is not a fancy patent flour, for the reason that there is no standard fixed or shown for such flour, and that it is a mere conclusion of the witness.

82. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Marshall to the effect and in substance that in his opinion a substance or substances were added to the flour in question by the treatment of the flour by the Alsop Process, for the reason that it is a mere conclusion of the witness without any knowledge as to the Alsop Process, and an invasion of the province of the jury.

83. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Boos to the effect and in substance that upon the assumption that bread made from the flour contained nitrites or nitrite reacting material to the extent shown by the fluid in the tube, exhibit 30, in his opinion there had been a poisonous substance added to the bread by the bleaching of the flour that was seized, for the reason that there is no evidence that the flour in question contained any nitrites to the extent of the
2674 fluid in exhibit 30, because the testimony is a mere conclusion of the witness, and is an invasion of the province of the jury to decide the case.

84. Because the court erred in admitting over the objections and exceptions of claimant the question to the witness Boos to the effect and in substance as follows:

"Q. Now, with respect to the adulteration of foods by the addition of poisonous and injurious substance, you may tell us whether or not in your opinion foods may be adulterated by such additions when the consumption of the same may not produce evidence of injury or poisoning manifesting itself by symptoms or apparent effect";

answered in the affirmative, for the reason that it is not responsive to any of the issues in the case, is a mere conclusion of the witness is a mere conclusion of law, and does not refer to the flour in question or the bread made therefrom.

85. For the reason that the court erred in admitting over the objections and exceptions of claimant the question to the witness Boos to the effect and in substance as follows:

"Q. Now, as to power to endure the eating of nitrites in bleached flour bread—would that be constant, or variable?"

for the reason that the witness had said that he didn't know anything about it, that he had never observed any effect or result from the eating of nitrites whatever, except in concentrated form; that it is a mere conclusion of the witness and a conclusion of law.

86. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sloan to the effect and in substance as follows:

"Q. Now, Doctor, we want to take your opinion about a hypothetical question which I will ask, and in which I will ask you to assume certain facts. This is a proceeding by the Government to condemn as adulterated certain flour. You may assume to be true that the flour seized, complained of, was bleached by a process known as the Alsop process, which bleaching was affected by treating the flour with nitrogen peroxide gas mixed with atmospheric air to such an extent that the flour was substantially whitened; that upon such treatment the gas coming into contact with the flour and the moisture contained therein, there was formed in that flour two acids, nitric acid and nitrous acid, and there was added
2675 thereto poisonous substances, among them nitrites, organic and inorganic; you may further assume that this flour, and food stuffs made in whole or in part by its use, was by this treatment rendered less digestible than it would have been had it not been so treated; and you may further assume that upon the consumption of bread containing these nitrites so added an effect would be had upon the blood of the consumer depending in extent upon the quantity of nitrites consumed in the bread; that that effect is a chemical one, changing the hemoglobin of the blood to met-hemoglobin, and upon these facts I want to get your opinion as to whether or not the continued and customary use of bread made from such flour would be injurious to the health of consumers or tend to be so injurious?

Judge Scarritt: Just a moment. I object to that, if your Honor please, because the question does not include all the testimony necessary to present the hypothetical question to the witness; further, it is based upon the assumption of opinions of other witnesses, and third, that it invades the province of the jury, and calling for a decision of the issue that is involved in this case.

The Court: Objection is overruled.

To which exceptions were saved.

By Mr. Butler: Go on, doctor, you may answer.

A. In my opinion that would be the tendency.
Q. What would be the tendency, doctor?
A. To be deleterious to health.
Q. Upon what do you base that opinion, either in your experience or professional learning?

Judge Scarritt: I object to that because he has already said that he based it upon the hypothetical question.

Mr. Butler: Well, I mean the reasons for his opinion, of course it assumes the facts.

Judge Scarritt: For the reasons asked in the hypothetical question. When that is answered why as far as he is concerned that ends it. We object to it for that reason.

The Court: You may answer it; go ahead, doctor."

To which ruling exceptions were saved" to the whole of the testimony which is incompetent and immaterial for the reasons above stated, and for the reason that the question assumes that there are nitric acid and nitrous acid in the flour, of which there is no proof; that the flour contains organic nitrites, of which there is no proof; that the effect of nitrites so added to the flour upon the blood of the consumer would be to produce met-hemoglobin, of which there is no proof; and for the further reason that the witness in his cross-examination as follows:

"Q. If anybody is suffering from a poison by eating bread three times a day it is apt to be chronic, is it not?
A. Yes, sir.
Q. Now, what are the symptoms of chronic nitrite poisoning? A. That is what I don't know.
Q. Nobody else knows do they? A. No, sir."

2676 87. Because the court erred in refusing of his own motion to permit the jury at the request of the claimant to visit in charge of a bailiff one of the flour mills referred to in the evidence and located in the city in which the case was being tried, for the purpose of inspecting the same and ascertaining for themselves the arrangement and conduct of the process, the smell or lack of smell of the gas, the color or lack of color of the gas, and the practical effect it had upon the flour while the same was being bleached.

88. Because the court erred in sustaining over the exceptions of claimant the objection of the Government's counsel to the testimony of the witness Leflang to the effect and in substance as follows:

"Q. You may tell the jury whether or not the flour is rendered inferior by this process from what it was before, in your opinion as a miller.

The court sustained objections to which claimant saved exceptions.

Q. Could you ascertain by inspection whether a flour was inferior after the process from what it was before?

A. Yes, sir.

Q. Was this flour inferior after the process from what it was before? A. It was not."

objection of libelant sustained by the court on the ground that the witness has not shown himself to have any knowledge of this chemical change in the air as applied to the wheat, to which claimant saved exceptions; and for the further reason that this same witness was put upon the stand by the government and was shown to be experienced and qualified as a miller; and for the further reason that questions of the same character were asked by the counsel for the Government of his own witnesses and the objections thereto were overruled by the court.

89. Because the court erred in sustaining the motion of libelant to strike out the testimony of the witness Wesner to the effect and in substance as follows:

2677 "Q. How does the amount of nitrite reacting nitrogen in naturally bleached flour compare with that in commercially bleached flour?

A. Well, it would have been present to the same extent, and even more than what we find in the commercially bleached flour.

Mr. Butler: I move to strike out the answer as not responsive.

The Court: The answer is stricken out as not responsive."

90. Because the court erred in sustaining the objection of the government to the testimony of the witness Wesner to the effect and in substance as follows:

"Q. Is there any difference in the chemical reaction, between natural bleaching, and flour bleached by the Alsop process?

A. I have never been able to find and chemical difference between naturally bleached, and that bleached by the Alsop process.

Q. Now, how have you arrived at this conclusion. Will you tell us, and, if you have made any experiments, you may recite them.

A. Well, in this way: the coloring matter in flour is a distinct chemical body, and it reacts towards oxide of nitrogen, in a certain way. That is, when it combines with these oxides of nitrogen, it loses its yellow color, and it does not make any difference whether the oxide of nitrogen is introduced by the flaming electric arc discharge, or whether the oxides of nitrogen be taken up from the air, by this coloring matter. Now, you take, for example, corn starch. That contains a--

Mr. Butler: (Interrupting) Just wait a minute. I object to that as argumentative, and not responsive to the question asked.

The Court: Yes, just confine your answer to the question.

Mr. Scarritt: He is going over the ground that his (the Government) witness went over, if Your Honor please, and in the same way.

The Court: The objection is sustained.

Mr. Scarritt: Save an exception."

91. Because the court erred in sustaining the objection of the Government to the testimony of the witness Burgner to the effect and in substance as follows:

"Q. Now do you eat this bread from bleached flour yourself. A. I do.
Q. Do you use it in your family?

Mr. Butler: Oh, I think I will object to that as irrelevant.

The objection was sustained and exceptions saved.

92. Because the court erred in sustaining the objection of the Government to the testimony of the witness Edgecomb to the effect and in substance as follows:

2678 "By Mr. Elliott: Now, I will ask you to tell us what, in your judgment, is the effect on flour of bleaching it.

A. It whitens it in color, and ages the flour.
Q. And what? A. Ages the flour.
Q. Now, tell us what you mean by 'ages the flour'.
A. I mean that, before the use of the Alsop bleacher, we always carried large stocks of flour in the storehouse—

Mr. Butler: I object to that as not responsive to the question and move to strike it out.

The Court: That is not responsive, and is stricken out."

93. Because the court erred in his rulings, and remarks and arguments and statements before the jury at the trial which were to the effect and in substance as follows:

"Q. I will ask you if you have ever had experience in delivering, or giving bleached flour and unbleached flour to bakers?

A. Yes, sir.

Q. And if there has been any difference in the way that flour has been received by any bakers, you can tell what it is.

Mr. Butler: Wait a moment. I have understood it to be indicated that we could not go into what the customers said.

The Court: One of the issues in this case is, not whether the customers are satisfied, so much, because it is charged that customers are satisfied by fraudulent methods, to-wit, in the language of the statute: 'If it be mixed, colored, stained, and so forth, in a manner whereby damage or inferiority is concealed', is one of the things charged, and, secondly, where a poisonous ingredient has been inserted; so that the customer, the bread eater—not the bread seller, may be deceived; inferiority may be concealed. That is one of the very issues. A man might hold his trade, and his bakers be absolutely satisfied, but it would be in contravention of the Pure Food Law, if they are satisfied, because they have been deceived, and inferiority is concealed, just as I may get a coat, supposing it to be a Scotch import, and be perfectly satisfied with it, but, upon analysis or investigation, it might be American shoddy. So, how can you make that the test, Mr. Elliott, I may have been satisfied with the bread I was eating, if I knew nothing about the bleached flour process. The inferiority may have been concealed from the ordinary housewife or servant, or the purchaser for the family. They may be perfectly satisfied, but, if inferiority is concealed, or the poison injected, is it not in violation of the Pure Food Law, precisely as my ham that I buy may be loaded with preservatives, or maple sugar that I buy may smell and taste to me like maple sugar, but an analysis may show that it is made out of brown sugar, and yet, the purchaser in the one case is entirely satisfied. So, how are you going to get at it in that way?

Mr. Butler: Let me suggest the further point that it is merest conclusion and hearsay.

The Court: I am simply saying, now, that in my judgment, it is not the test, to show by the miller, or by the baker that, because—

Judge Scarritt: (interrupting): If your Honor please, we certainly must be permitted to object and except to the statements made by the Court at this time.

The Court: You may take exception, but nevertheless, I will make my statement, just as I understand the law,
2679 that, if it comes within either of these provisions of this statute, then this is contraband. Otherwise, it is not. I mean the two issues that I am now dealing with. There are two other issues. "If it be mixed, colored, powdered, coated, or stained, in any manner whereby damage or inferiority is concealed,' then it is contraband, and in violation of the Pure Food Law, under which this trial is progressing.

Mr. Scarritt: Now, let me just suggest on that—

The Court: All right, Now, you go on and talk, Judge, and then I will go on.

Mr. Scarritt: I do not want to talk. I just want to suggest that this is one of the ways that your Honor has suggested, two or three times in this trial, that it goes to the question of the weight of the testimony, and not the admissibility of it, because it is one of the ways to determine whether there is inferiority there. People do not generally accept and take inferior things, without making some protest or kick, and this goes to that extent, to show that it is not inferior, that there is nothing concealed, that the superiority of the product is revealed, and not concealed. If everybody is satisfied with a certain thing, and so express themselves, either en masse, or as individuals, why that is testimony going to show that that article, or whatever it is, that meets the public approval, is a superior article, and not an inferior article.

Mr. Butler: That point is this: If the baker is satisfied with it, let us have him here, and we will ask him. If the house-wife is satisfied, bring her here, and we will ask her. But, to have a man who is a miller testify by mere hearsay that it does so-and-so, does not appear to me to prove anything.

Mr. Scarritt: Is not the chain complete. The miller affords to the dealer what the dealer necessarily requires for the public consumption.

Mr. Butler: No miller can testify that I am satisfied or dissatisfied as to the flour, without hearsay.

Mr. Scarritt: Yes, he can. It is a matter of notoriety.

Mr. Butler: The miller might want to cheat the person who buys the loaf of bread, and he may want the bleached flour, and still pray for it.

The Court: Just a moment, gentlemen. Here is what I am trying to get at: I have not expressed any views in this case, and do not intend to, as yet, at least, as to what the evidence tends to show: I mention that, in answer to the criticism of Judge Scarritt, but sometime, sooner or later, you have got to get to the issues here, as presented by the statute, two of which issues are: 'If it', in this case meaning flour, 'be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed'; if the verdict is solely under that, one result follows. Another issue that will be submitted to the jury later on, is : 'If it',—meaning flour,—'contain any added poisonous or other added deleterious ingredient which may render such article injurious to health'. Now, then, take it under the first one, particularly. Let me illustrate. I may buy or order at the cigar store a Havanna cigar, sold to me as a havanna cigar. I may think it is the finest cigar I have ever got in my life, but it turns out that it was native growth tobacco, one inferior to the other.

Mr. Scarritt: Not necessarily.

The Court: Now, Judge, I would like a good deal if I could talk once without interruption.

Mr. Scarritt: All right, I beg your pardon, your Honor.

2680 The Court: I may be satisfied in any supposed case—I don't care what you take—I may be satisfied, and yet, if the inferiority has been concealed, then it is a fraud, and must like all frauds, the fraud is concealed, otherwise the man would not purchase it. The horse with the heaves or other disorder, is concealed from me; I buy him, would not buy him, but for the concealment of the fraud. Now, the point I am getting at here, is it for the miller to say that the trade is satisfied? That is what I am getting at. The trade may be or may not be satisfied by the very concealment of the inferiority. I am not saying it is inferior. Later on that will be submitted to the jury. Whether new wheat flour, concealed as old flour, sweated in the sack, sweated in the bin, gone through the natural processes, if that is inferior, if that inferiority is concealed by the process, then, is it not in violation of this statute?

Mr. Scarritt: We must object and except in the same way, Your Honor.

The Court: Sir?

Mr. Scarritt: I say, we must object and except, as we did before, to the remarks of the Court at this time.

The Court: Which particular remark?

Mr. Scarritt: The remark with reference to—

The Court (Interrupting): My reading that statute?

Mr. Scarritt: Reading the statute, and making the argument on this proposition.

The Court: Very well, I repeat, I have not expressed my views about that evidence in this case.

Mr. Scarritt: In this view, your Honor. Your Honor has said we must all keep our minds free from any conclusion, until we get through.

The Court: Yes, sir.

Mr. Scarritt: I think it is perfectly right.

The Court: Yes, sir. I have not expressed it, but I am trying to get back, because, sooner or later, this case is going to be submitted to the jury under the provisions of the statute, to which I will draw specific attention. If inferiority is concealed by the bleaching process, then what follows? If a poisonous gas—if it is poisonous—was injected in this flour, and the flour is made white, then, if that is harmful, and so forth, in the language of the statute, then what? Now I see you gentlemen are all anxious to make a speech, and I am not anxious to hear you this evening. Court is adjourned until tomorrow morning.

(Thereupon Court was adjourned until ten o'clock A. M., Wednesday, June 22nd, 1910.)"

Which rulings and remarks and statements and arguments were highly prejudical to the rights of the claimant, and were not germane to the matter under consideration at the time.

94. Because the court erred in his ruling, and remarks, and arguments and statements before the jury at the trial which were to the effect and in substance as follows:

"The Court: When we adjourned last evening, we were talking about certain matters. I do not know whether there was anything further counsel desired to say about that, or not? If there is, I will hear you, briefly.

2681 Mr. Elliott: If your Honor please, I do not want to weary you with this talk, but I merely want to make this observation, because I think my question was not understood. As I understand it, Mr. Butler has been endeavoring to show that, if a new flour is bleached—that is, flour from new wheat, we will say, is bleached and whitened in color, and, if it possesses, notwithstanding the bleaching, all the properties of a new flour, and is unworkable, a person might buy that

flour, thinking it was a naturally aged flour, and it had the properties of naturally aged flour and be deceived. Well, now, let us pass that for a minute. Now, I have been endeavoring to show by this witness that, in his judgment, flour from a new wheat that is bleached, not only is lightened in color, but that its quality is improved, and that it is aged and conditioned. That is what he testified. Now, it seems to me it is germane to that, to show the difference in the way flour has been received by his customers, whether it was unbleached or bleached.

The Court: Who do you mean by customers?

Mr. Elliott: The man he has sold it to—the baker, for instance. If he has sold them flour, bleached and unbleached, has there been any difference in the way they have been received, and if so, what? That is what I have been trying to bring out.

Mr. Butler: The last question is: 'If there has been any difference in the way that flour has been received, by any baker, you can state what it is'. Now, maybe the baker paid less for it [that] he would have paid if it had been a naturally aged flour. Maybe it is a matter of adjustment, commercial considerations, and, in any event, it is purely hearsay for him to testify as to the states of mind of a baker, as to this. Let the bakers tell how this flour does. Let them say what kind of bread it makes. It is not for a miller to get off, in sweeping remarks, that it gives satisfaction to bakers, or somebody else. Let somebody else who has used it, who knows, say, and some one we can cross-examine. It won't do to bring witnesses here, who do not know anything, and let them give their conclusions, that we cannot cross-examine—matters of hearsay. That might do in a town meeting, but it won't do to try a law suit that way.

The Court: Now, let me say a few things. No one doubts the importance of these matters, and I am not speaking only of the present question. So far as that one question is concerned, it may or may not be pivotal, but, on the 30th day of June, 1906, four years ago, congress, with the approval of President Roosevelt, carried this measure forward into a statute known as the Pure Food and Drugs act. That is the statute under which we are proceeding, and under which this trial is being conducted. That congress had the authority and power to so enact, I have already adjudicated in another forum, in part, the same parties, perhaps, and, in part, independent parties, but I have an abiding conviction on that question, as expressed in my opinion. I am not speaking as to the reasons for my opinion, but the conclusions. I could better that opinion, I think, if I had the time in which to do it, but I have seen no reason whatever to modify my conclusions as to an

interstate shipment like this, from Lexington, Nebraska, to Castle, or Greencastle, or whatever it may be, in Missouri, being an interstate shipment, gives this court jurisdiction to hear and determine the question as to the particular flour now under seizure. This pure food statute seems to me is for the benefit of the consumer, in this case the bread eater, which com-
2682 prises the entire human family. This statute is not for the benefit of the baker, or the middleman, nor for the miller, nor for the wheat grower. It is for you, and it is for me, and every one else who eats bread, and probably we all do, three times a day, and, quite likely, divided into three grand divisions. One is with reference to drugs and medicines, in which a distinct, specific test is made. With that, we are not now dealing. The second division is with reference to confectionery eaten, perhaps by all children, and quite a percentage of adults. That fixes a specific test in not what the confectionery shall contain, but what the confectionery shall not contain. The Third and last division, being the one under which we are now proceeding, is with reference to food stuffs, including flour made up into bread, pastry, and so on. Most obviously there could be no specific test made with reference to foods, and the more one thinks about that, the more strongly it grows on him, and it necessarily follows that congress was compelled to use some general terms in the statute. One is with reference to misbranding. To that, for the present, I shall not allude. But this statute refers in this way, aside from the interstate shipment proposition, which is a question of law 'that, for the purpose of this act, an article shall be deemed to be adulterated', passing by drugs and confectionery, 'in the case of food, first if any substance has been mixed and packed with it, so as to reduce or lower, or injuriously affect its quality or strength'. The pleadings under that clause, present an issue that is now being tried. Passing by the second and third, as not being germane to any inquiry here, the fourth 'if it be mixed'—it meaning flour—'colored, powdered, coated, or'—disjunctive 'or'—'stained in a manner whereby damage or inferiority is concealed'. Now, under that, these pleadings present a distinct issue. Fifth 'If it'—meaning flour, in this case—'contain any added poisonous, or other added deleterious ingredient, which may render such article injurious to health'. Now, there are the four issues we are trying. First, with reference to misbranding, that I have passed to one side for the time being. Here are the other three.

Mr. Scarritt: Is your Honor charging the jury, now?

The Court: No, sir. I am giving my reasons, being an explanation of my ruling. Why that question, Judge, I do not understand.

Mr. Scarritt: Well, it seems to me it does not appertain to the ruling, as to whether these bakers shall testify as to what effect this flour has. They are part of the community. You cannot exclude them as a part of the community. They are consumers, as well as purchasers.

The Court: My belief is, this statute is for the benefit and protection of consumers.

Mr. Scarritt: I agree with you, and they are consumers. We are all consumers, but it seems to me it is unnecessary at this time, if Your Honor please, with all due regard and respect for your Honor, I have to go over the whole ground of this pure food law. That is what occurs to me. It is anticipating the charge to the jury. I say that, because I think that it is my duty to say it in the interest of my clients.

The Court: I was trying to analyze the issues, and what leads to it.

Mr. Scarritt: I understand, your Honor.

2683 The Court: Now, there two theories here with reference to the poison. One, by the government, and one by the defendant, concerning which I now have nothing to say, but will, later on, in my charge to the jury. But the question now before the court goes to clause four, which I repeat 'If it'—meaning flour in this case—'be mixed, colored, powdered, coated or stained, in a manner whereby damage or inferiority is concealed'. Concealed from whom? That is the ultimate question that I am to charge this jury concerning. Now, any evidence on the part of the government that tended to show that inferiority of flour is concealed by the bleaching process, was admissible. Any evidence tending to show that inferiority of flour is not concealed by the bleaching process, is legitimate evidence for the claimants to offer. Now, I am not saying but what you can take it, step by step, and show that the baker is not deceived, or that the inferiority, if there is an inferiority— and that is a question of fact for the jury—Iam not saying but that you can show by the baker that the inferiority, if any, is not concealed from him, the baker. The question is, is that enough? I am not now saying. I will cover that in my final charge to the jury. I am not charging the jury here at all, yet. I am giving the reasons for the analysis I have made in my own mind, of this statute. Therefore, I think you can take, one step at a time, show that if there is any inferiority, that such inferiority is not concealed from the baker, but the question remains, will that be enough? I shall wait for further arguments on that. But I have no doubt in my own mind, at this time, subject to any change of opinion, about it, that this

statute is for the benefit of the consumer. Therefore, I will allow this question to be answered.

Mr. Scarritt: If your Honor please, we desire to except to the remarks of the court in making the ruling on this question, and save our exceptions.

The Court: Very well."

Which ruling and remarks and statements and arguments were highly prejudicial to the rights of the claimant, and were not germane to the matter under consideration at the time.

95. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Boettler to the effect and in substance as follows:

"Q. Is there such a thing as eggs preserved with borates?

Mr. Scarritt: We object to that as immaterial.

The Court: Go on.

A. There are preserved eggs, but I don't know what they are preserved with.

Q. Did you ever try preserved eggs, to make cake, with unbleached flour? A. Undoubtedly.

Q. Now, I would like to know where you got those eggs, and how they were preserved.

Mr. Scarritt: We object to this line of testimony, if Your Honor please,—immaterial.

The Court: He may answer.

2684 96. The court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Sayre to the effect and in substance that the addition of prussic acid to cantaloup and to coffee and to shredded wheat biscuit and to bacon eaten for breakfast would be injurious to health; for the reason that it has no relation to any of the issues in this case and was made for the purpose of misleading the jury and prejudicing the rights of the claimant herein.

97. For the reason the court erred in sustaining the motion of libelant's counsel to strike out the testimony of the witness Abbott to the effect and in substance that deception as to the grade of flour could be practiced as well with the unbleached flour as with the bleached flour.

98. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Teller to the effect and in substance as follows:

"Q. By Mr. Butler: Is a carload of corn a poisonous substance? A. Taken in quantity it would be.

Q. Yes, all right. How is this NOCl shipped out, in what commercial volume does Professor John A. Wesener ship that out to millers to bleach flour? A. I never kept track of that.

Q. Have you seen the carboys there like the compressed soda water drum? A. I have seen some cylinders, yes.

Judge Scarritt: We object to that as clearly outside of the issues in this case. About nine-tenths of the testimony that has been introduced here is on other things that have no more to do with this flour in question than the man in the moon.

The Court: Objection overruled.

Exception saved.

Q. Now, is a whole drum full of nitroxyl chloride a poisonous substance? A. In concentration it is poisonous.

Q. As shipped out is it a poisonous substance?

The same objection by claimant.

The Court: He may answer.

Exceptions saved."

99. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Albert to the effect and in substance as follows:

2685 "Q. Don't you think it would be a poor policy to put nitrites in baby's food regularly so the mother could not keep it out. I ask you if it would not be poor policy to purposely add nitrites like amyl nitrite, for example, to a baby's foods regularly and habitually and to such an extent that neither baby nor parent could avoid giving the nitrite carrying food to the baby? That, I think, is within the fields of pathology.

Counsel for claimant objected to the question as incompetent, irrelevant and immaterial; invading the province of the jury; and a wrongful conclusion of the witness because there is no amyl nitrite in this flour, improper cross-examination, and simply for the purpose of prejudicing the jury.

The Court: He may answer.

Exceptions saved."

100. Because the court erred in permitting over the objections and exceptions of claimant the question to the witness Webster to the effect and in substance as follows:

(By Mr. Butler)

"Q. And cream, now then we will assume that the milkman for the purpose of making his cream or milk stand up a little longer, it is artificial aging he will call it for short, put in a little formaldehyd but so small an amount that the most feeble person in the community might take the milk in ordinary consumption as milk is consumed and that no doctor whether skilled or pharmacologist or toxicologist could observe any harmful effects on the public or the person, whoever it was, from the formaldehyd, in such case from the standpoint of health would you approve or would not disapprove of the addition of the formaldehyd, am I right?";

for the reason that it is absolutely immaterial to any of the issues in this case, and introduced only for the purpose of prejudicing the jury.

101. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Webster to the effect and in substance as follows: That the adding of formaldehyd to milk, sulphates to syrup and borax and coal tar dye to butter, and other ingredients to other substances, and eaten as a breakfast would be poisonous, for the reason that it is immaterial and of no relevancy to any of the issues in the case, and is introduced for the purpose of misleading and prejudicing the jury: and in the same connection also objected and excepted to the remarks of the court to the effect and in substance as follows:

"Q. The Court: Now, Mr. Butler has commenced with the oat meal and cream with some poison in it, but not
2686 enough of itself to hurt, and then he takes pancakes with butter and syrup, then he takes eggs, and he takes bacon, now then, and coffee, now then he finally quits, he finishes all his breakfast, or turns to take some bread and butter, I don't know what else. Now when you get through with an ordinary meal for a healthy man, with a good appetite, the question is what are you going to have when you get through.

Judge Scarritt: I want to make an objection to the question as stated by the court and by the gentleman on the other side, as absolutely irrelevant, incompetent and immaterial to any of the issues in this case, and involves an analysis of every ingredient in every piece of food that has been mentioned, and the action or comparative action of one poison upon another, or one ingredient upon another, and is an unfair question and an unfair illustration, as applied to the issues in this case with reference to this bleached flour.

The Court: Objection is overruled."

Exceptions saved.

102. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Webster to the effect and in substance as follows:

"Mr. Butler: Now, if, at the hearing of the bleached flour case in Washington, November, 1908, he (Dr. Wesner) stated in substance:

Mr. Elliott: Now, just in regard to that. We object to this, your Honor, because Doctor Wesner is not here, and there is no possible way of knowing whether that is what Doctor Wesner said, or not.

Mr. Butler: I am going to ask him about his testimony. That is what he said, and you have the transcript, and you will find that at page 277 of the transcript furnished you of that hearing, when you, yourself, were there, taking part in the hearing.

Mr. Scarritt: It don't make any difference who was there. This kind of testimony is not admissible. It is purely hearsay, not an impeaching question, because he didn't ask Doctor Wesner, when he was here, if he said that, and we object to it for those reasons.

The Court: Objection overruled."

Exceptions saved. The question was answered.

103. Because the court erred in admitting over the objections and exceptions of claimant the testimony of the witness Webster to the effect and in substance as follows:

"Mr. Butler: But you would say that it was wicked, and sinful, and wrong to add formaldehyd to clean milk that was being fed to a baby—pure, fresh milk? You would say that was dangerous to the baby's health, and it would be wicked and wrong to do it, wouldn't it?

Mr. Scarritt: We object to that form of question.

The Court: He may answer.

104. Because the court erred in refusing and denying the claimant the right to introduce upon the examination of
2687 the witness Cross the exhibit numbered 281 of gas obtained by him at the Alsop Process mill, mentioned in evidence, and for refusing to allow such exhibit number 281 to be substituted for exhibit number 280, and in the same connection the court erred in the statements and remarks made by him in reference to such exhibits, which were to the effect and in substance as follows:

"Judge Scarritt: We are pertectly willing to let the jury go and see it themselves.

The Court: Judge Scarritt, no use of saying, as has frequently been said, for the jury to go and see it for most obvious reasons to me as a lawyer, for the reason that it cannot be made of record; there is no statutory authority therefor either federal or state that I know anything about. There is nothing for the jury to see if they go there other than what has been described here twenty-five or fifty times, and it will not do for you to say that I am keeping out any evidence, or anything that would enlighten the jury; it would not enlighten the jury, and it could not be made of record, if I did allow them to go.

Judge Scarritt: We object and except to the remarks of the court."

105. Because the court erred in admitting over the objections and exceptions of the claimant the testimony of the witness Lecount and the witness Schwitzer as to the effect of the introduction of 55 poisons in the food of an ordinary human being in the three meals consumed by such being in a day, as being entirely irrelevant and immaterial to any of the issues in the case.

106. Because the court erred in admitting over the objections and exceptions of the claimant the testimony on rebuttal of the witness Acree for the reason that the same was not proper rebuttal testimony.

107. Because the court erred in not submitting all of the issues in the case to the jury in his charge.

108. Because the court erred in submitting only two forms of verdict to the jury.

109. Because the court erred in not submitting to the jury a form of verdict upon each of the four charges or counts contained in the libel in this case.

2688 110. Because the court erred in charging the jury peremptorily to find for the Government upon all the charges in the libel.

111. Because the charge of the court to the jury has the effect of confiscating claimant's property without authority of law.

112. Because the court's charge to the jury is inconsistent and contradictory.

113. Because the court's charge to the jury does not present all the issues under the evidence.

114. Because the court in his charge to the jury commented upon and emphasized portions of the testimony and evidence favorable to the Government to the exclusion of testimony and evidence favorable to the claimant.

115. Because the court erred in submitting to the jury in its charge inconsistent issues of misbranding and adulteration.

116. Because the court erred in its charge in peremptorily instructing the jury to find the issues for the Government upon both the charge of misbranding and of adulteration, which are inconsistent and contradictory.

117. Because the verdicts of the jury are inconsistent and contradictory.

118. Because the verdicts of the jury as to misbranding and adulteration cannot stand together.

119. Because the verdict and judgment are contrary to law.

120. Because the verdict and judgment are contrary to the weight of the evidence.

121. Because the verdict and judgment are contrary to the law and the evidence.

122. Because upon the whole evidence in this case the
2689 verdict and judgment should have been for the claimant and not for the Government.

123. Because the court erred in instructing and charging the jury as follows:

"The statute under which this proceeding was brought and the case now being tried is an enactment of the Congress of the United States approved by the then President June 30th, 1906 (four years ago). This statute as to its validity is challenged by the claimant herein. But with that question you have no concern other than to observe it, because the Court holds that the Congress of the United States with the approval of the President had the power under the Constitution of the United States to enact the statute that was enacted and under which we are proceeding, and the Court holds and so directs you that the statute is a valid enactment, and to be enforced in any and all cases where the evidence and the facts come within the wording of the statute."

124. Because the court erred in instructing and charging the jury as follows:

"It will be observed that the statute deals with drugs, medicines, liquors and foods. A part of the statute is with reference to drugs, medicines and liquors, and likewise con-

fectionery, but with which in this case we are not concerned except as the same has a bearing with reference to foods."

125. Because the court erred in instructing and charging the jury as follows:

"While you are the sole judges of the facts and of the testimony, and what weight shall be given thereto regardless of expressions of opinion by me, it is my belief that I can be of substantial aid to you in stating some facts which in my opinion are so well established by the evidence as that you ought to have but little or no argument with reference thereto, and take the same as established facts."

126. Because the court erred in instructing and charging the jury as follows:

"It is also an established fact in the opinion of the Court that the flour seized and in question was made from wheat of a 1909 crop grown in the State of Nebraska and known by the name of No. 2 Turkey Wheat, and that the wheat was ground at the claimant's mill at Lexington, Nebraska, on the night of March 31st, 1910 and shipped the next day to the said Terry at Castle, Missouri, by whom it was received in about seven days."

127. Because the court erred in instructing and charging the jury as follows:

"It is also an established fact in the opinion of the Court that the wheat from which the flour was made contained a percentage of what is called Yellow berry wheat. The witness,
Mr. Tucker, the head miller of claimant, testified that
2690 the yellow berry was about or approximately ten to twenty-five per cent of the entire amount of the entire wheat used to make the flour in question that has been seized in this case, and the testimony of the other millers in Nebraska and Kansas shows that the wheat called 'yellow berry' is frequently, indeed commonly found mixed with turkey wheat as it is grown in those states, and that the percentage of such yellow berry varies frequently running higher than fifty or seventy-five per cent of the turkey wheat produced in various places and communities in said states."

128. Because the court erred in instructing and charging the jury as follows:

"It appears that nitrogen-peroxide gas is—in concentration —a brownish or yellowish gas heavier than atmospheric air, of offensive odor, corrosive in character, and a poison and deleterious substance, and if taken by a human being in sufficient quantities will produce poisonous action and death."

129. Because the court erred in instructing and charging the jury as follows:

"It appears that when nitrogen peroxide gas is brought into contact with water or moisture, there is by chemical change produced nitrous acid and nitric acid in equal quantities, and it also appears that each of these acids so produced is a poisonous and deleterious substance which if taken by a human being in sufficient quantities will produce poisonous action and death."

130. Because the court erred in instructing and charging the jury as follows:

"It appears that nitrous acid readily combines chemically with other substances such as are contained in wheat flour and thereby forms nitrites of various kinds, depending upon the character of the substances with which the acid chemically combines."

131. Because the court erred in instructing and charging the jury as follows:

"It appears that such nitrites as may be formed by the introduction of nitrous acid into flour are poisonous and deleterious substances and that if taken by a human being in sufficient quantities, will produce poisonous action and death."

132. Because the court erred in instructing and charging the jury as follows:

"It appears that nitric acid readily combines chemically with other substances such as are contained in wheat flour, and thereby forms nitrates of various kinds depending upon the character of the substances with which the acid combines."

133. Because the court erred in instructing and charging the jury as follows:

2691 "It is not incumbent on the government to show that the allegations of the amended libel in a case like this are true beyond a reasonable doubt. Proofs beyond a reasonable doubt are only exacted in a criminal case, and this is not a criminal case within the meaning of that rule, but it is an action in the nature of a civil action."

134. Because the court erred in instructing and charging the jury as follows:

"It is incumbent on the government to prove that the flour seized was adulterated and misbranded in some respects or particulars alleged in the libel. But it need not prove that the flour was adulterated or misbranded in all of the respects and

particulars alleged. If it appears from the evidence in this case that the flour was adulterated in any respect or particular alleged, then you must find for the government that the same was adulterated, and if it appears from the evidence that the same was misbranded in any respect or particular alleged, then you must find for the government that the same was misbranded."

135. Because the court erred in instructing and charging the jury as follows:

"I charge you that if the treatment of this flour by the Alsop process for the purpose of bleaching and whitening resulted in any injury to the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes, that your finding must be for the government that the flour is adulterated."

136. Because the court erred in instructing and charging the jury as follows:

"On the second branch of this particular issue, I charge you that if you find from the evidence that by the direct action and as a result of the treatment of this flour by the Alsop process the elasticity of the gluten has been lessened or impaired so as to injuriously affect the bread-making qualities of the flour, that your finding must be for the government that this flour is adulterated."

137. Because the court erred in instructing and charging the jury as follows:

"On the third point of this particular issue, the government claims that the treatment of this flour by the Alsop Process caused substances known as nitrites or nitrite reacting material to be mixed and packed with the flour so as to reduce, lower and impair its bread-making qualities, and so as to render the same injurious to health. If you shall find from the evidence that the flour seized was by such treatment so injured, your finding must be for the government that this flour was adulterated."

138. Because the court erred in instructing and charging the jury as follows:

2692 "And it further appears that by the lapse of time and aging and conditioning by natural processes wheat flour will improve for a period of time, stated to be from two to four months, or thereabouts, and that such improvement increases the value of the flour and makes it lighter in color; and it further appears that this bleaching process makes the fresh-

ly milled wheat flour appear to be like and to simulate the appearance which that same flour will assume after natural aging and conditioning. And it further appears that this flour when seized was not naturally aged or conditioned, but was newly milled flour."

139. Because the court erred in instructing and charging the jury as follows:

"On the second branch of this particular issue, I charge you that if the treatment by the Alsop Process has given to this flour the appearance of a better grade or quality of flour than it really is, you should find for the government that it is adulterated."

140. Because the court erred in instructing and charging the jury as follows:

"And upon the third branch of this particular issue, I charge you that if you should find from the evidence that this flour is of a grade of flour inferior to patent flour or is a flour inferior to flour made from the first quality hard wheat, and that bleaching by the Alsop Process has caused it to have the plained to you in this charge—or the appearance of a flour appearance either of a patent flour—as that term will be exmade from the first quality of hard wheat, then you must find for the government that this flour is adulterated."

141. Because the court erred in instructing and charging the jury as follows:

"The substance of the charge found in the amended libel is that by the treatment of the flour by the Alsop Process it has been caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to-wit: nitrites, nitrite-reacting material, nitrogen peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances."

142. Because the court erred in instructing and charging the jury as follows:

"On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredients, it may not be condemned unless it shall further appear that such added substances are in such quantity that the flour shall be thereby rendered injurious to health."

143. Because the court erred in instructing and charging the jury as follows:

"And in enforcing the statute in proper cases the fact that it will subject the millers to some expense, or the fact, if it
2693 be a fact, that it will enable the millers to market their flour more readily or at a better price, is entitled to no consideration and will receive no weight at your hands."

144. Because the court erred in instructing and charging the jury as follows:

"The word 'poisonous' as an adjective conveys a descriptive meaning and is used in a qualitative sense, and not in a quantitative sense. That is, it refers to the kind of substance, and not to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause 'which may render such article injurious to health.' It does not say 'Which does render such article injurious to health,' but manifestly it was the purpose of Congress to include in this distinction all ingredients of a poisonous character to which in their essential nature, might be ascribed the tendency to affect health injuriously."

145. Because the court erred in instructing and charging the jury as follows:

"It is not conceivable that the Congress of the United States, when it passed this act, intended that producers and vendors might continue to add poisonous and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the government before proceeding to condemnation of an article of food as adulterated must prove that it contains added poisonous or other added deleterious ingredients in such a quantity as would render such article injurious to health. It is known to every one that there is no method of ascertaining or measuring the effect of the consumption of such substances in food upon the public health or upon the health of any particular individual."

146. Because the court erred in instructing and charging the jury as follows:

"It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances."

147. Because the court erred in instructing and charging the jury as follows:

"The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables,

and other articles, does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances. Therefore the court charges you that the government need not prove that this flour or food stuffs made by the use of it would injure the health of any consumer. It is the character —not the quantity—of the added substance, if any, which is to determine this case."

148. Because the court erred in instructing and charging the jury as follows:

2694 "The flour seized in this case is an article of food within the meaning of the Act of Congress."

149. Because the court erred in instructing and charging the jury as follows:

"It is admitted that this flour was treated by the Alsop Process for the purpose of bleaching or whitening, and the evidence establishes that nitrogen-peroxide gas was employed for that purpose and further establishes that that gas, nitrous acid, nitric acid, and nitrites of the kind which may be produced by such treatment are poisonous and deleterious substances, and that these substances when taken in sufficient quantities will produce poisonous action or death."

150. Because the court erred in instructing and charging the jury as follows:

"It appears from the evidence in this case that the bleaching process imparts and adds to flour substances referred to in the testimony as nitrites or nitrite-reacting material, and such substances were imparted to the flour seized in this case by the bleaching process. It further appears from the evidence that such substances so imparted or added to this flour are qualitatively both poisonous and deleterious, that is to say, that these substances are of a poisonous and deleterious character."

151. Because the court erred in instructing and charging the jury as follows:

"It is well known that wheat flour is not eaten raw. There is evidence in this case that tends to show that during the process of making bread nitrites or nitrite-reacting material contained in the flour is lessened and may be eliminated under some circumstances, but it is also well known that wheat flour is used for the making of other articles of food—biscuits, dumplings, pastry, cake, crackers, gravy, and perhaps other articles of food, which may be consumed by all classes of persons, the young, the old, the sick, the well, the weak, and

the strong; and I charge you that it is right for you in reaching your verdict to take these facts into consideration together with all the other proven facts and circumstances in the case.

152. Because the court erred in instructing and charging the jury as follows:

"With reference to the issue as to misbranding, the same divides itself under two heads, one with reference to quality of the flour, and the other with reference to kind of wheat from which it was made. The flour is branded as a fancy patent flour and it is also represented by label on each sack that the flour is made of first quality hard wheat."

153. Because the court erred in instructing and charging the jury as follows:

"It is the law that if the phrase 'patent flour' has a well known and well understood meaning generally among
2695 millers, flour purchasers, bakers, and in the flour markets of the country, then such meaning as so understood is to be attributed to that phrase. In other words, patent flour is the kind of flour that it is generally understood to be by millers, bakers, flour purchasers and in the markets generally."

154. Because the court erred in instructing and charging the jury as follows:

"On the second branch of the charge of misbranding contained in the amended libel, the facts appear to be that the flour seized was manufactured by the claimant at its mill from wheat which was raised in the year 1909 in the general vicinity of Lexington, in the State of Nebraska; that the wheat weighed about fifty-nine pounds to the bushel, and was of a variety known as No. 2 Turkey wheat, in which there was a quantity of wheat known as yellow berry or as sometimes called by millers, 'yellow belly', amounting to from ten to twenty-five per cent of the total wheat used to make this flour."

155. Because the court erred in instructing and charging the jury as follows:

"The wheat known as yellow berry is commonly found in Nebraska and Kansas growing with turkey wheat. It differs in color and quality from pure turkey wheat, and is considered by the millers less desirable and is of less value commercially."

156. Because the court erred in instructing and charging the jury as follows:

"The words upon each sack, 'this flour is made of first quality hard wheat', is in effect a representation that the flour seized was made from the best hard wheat."

157. Because the court erred in instructing and charging the jury as follows:

"You are to determine whether or not that representation is true. And in so doing you will not be controlled by the facts, if it be a fact, that the wheat used was the best grown in the district where claimant procured his supply for milling, but you have a right to consider the same in comparison with other wheats grown in different places and parts of the country as disclosed by the evidence in the case, and in the light of all of the evidence on this question say whether or not the wheat used was in truth and in fact first quality hard wheat."

158. Because the court erred in instructing and charging the jury as follows:

"In view of statements that have been made by counsel during the progress of this case, you will not consider and you must put to one side all questions of who the counsel are, or where they are from. This is not a contest between states or section of the country."

159. Because the court erred in instructing and charging the jury as follows:

2696 "The fact that the patent Office at Washington issued a patent for the Alsop Process has nothing to do with the question of branding correctly, or misbranding of flour. The fact that the Patent Office issued a patent for the Alsop Process does not warrant nor authorize the adulteration of flour as made by the Alsop Process, if it is adulterated. All these things must be put to one side, and your verdict must be determined in accordance with the law and facts in the case. It is of no importance to you, nor is it of importance to me, who will be pleased or displeased in this case, whether of counsel or of the parties, or of any other person. The only question is, What is the right, and what the wrong of this case?

160. Because the court erred in instructing and charging the jury as follows:

"Your verdict must recite whether this flour was misbranded or not, and your verdict must further recite whether this flour was adulterated or not, within the meaning of what I have heretofore said to you."

161. Because the court erred in its charge to the jury in submitting two verdicts or findings of fact for the jury to sign and return.

162. Because the court erred in instructing and charging the jury as follows:

"You will make no other findings than these two. All matters bearing these two forms you will give due weight thereto, and all matters not having a bearing thereon, you will utterly disregard."

163. Because the court erred in refusing to charge the jury as requested by the claimant and defendant in written requests heretofore filed.

164. Because the court erred in its charge to the jury in not submitting all the issues of the case to the jury, and in not submitting forms of verdicts on the four charges in the libel.

165. Because the court erred in its charge to the jury by not giving the jury in such charge a definition of poison or poisonous.

166. Because the court erred in its charge to the jury in submitting to the jury therein a wrong theory of the case and of the law of the case and of the evidence in the case.

167. Because the court erred in admitting over the objections and exceptions of the claimant, and in overruling claimant's objection thereto, the testimony of the witness Sheppard to the effect and in substance as follows:

By Mr. Butler:

"Q. Will you give us the result of your study with respect to the amount of damage to the gluten of the flour
2697 resulting from the use of various amounts of this nitrogen peroxide gas employed by the Alsop Process?

A. Yes, sir, I took the same flours and some unbleached and some bleached. (The witness proceeding with a long statement as to the effect of nitrites upon flour.)

By Mr. Elliott: Your Honor, for the purpose of an objection I would like to ask this witness how was this flour bleached that you were talking about?

A. I bleached it myself.

Q. With what?

A. With nitrogen peroxide.

Q. Did you bleach it with the Alsop machine?

A. Not with the Alsop machine.

Q. I will ask you if you have analyzed the gas of the Alsop machine and if you know the proportion of peroxide in it to add? A. No, I have not.

Mr. Elliott: Then I object, your Honor, to this testimony because it is not the process that was used by the claimant in bleaching his flour and it is not germane to any—I mean effects that Professor Sheppard got bleaching in his laboratory with pure gas, is not germane to what the Lexington Mill did, using the Alsop Process.

Witness: Mr. Elliott, first, one word of explanation.

The Court: Just wait a minute. Objection is overruled and the claimant excepts."

168. The court erred in striking affidavits from the files and sustaining libellant's motion therefor.

Wherefore, said Lexington Mill and Elevator Company, claimant in said original cause, and plaintiff in error herein, prays that the judgment and decree of said District Court be reversed and for such other relief as the court may deem proper.

ED. P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant and Defendant.

W. C. Scarritt,
A. M. Seddon,
of Counsel.

2698 The Bond for Appeal on Writ of Error, filed November 11th, 1910, is in words and figures as follows, to-wit:

United States of America—Sct.

Know All Men By These Presents, That we, Lexington Mill and Elevator Company (a corporation) and The Bankers Surety Company, of Cleveland, Ohio, are held and firmly bound unto United States of America in the full and just sum of Twenty-five Hundred Dollars ($2500.00) to be paid to the said United States of America to which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally by these presents.

Sealed with our seals, and dated this 8th day of November, in the year of our Lord, one thousand nine hundred and Ten.

Whereas, lately at the April (1910) Term of the District Court of the United States for the Western Division of the Western District of Missouri, in a suit depending in said court between

United States of America, plaintiff, and Six Hundred and twenty-five (625) sacks of flour and Lexington Mill and Elevator Company (a corporation) claimant and defendant, a verdict and judgment was rendered against the said flour & claimant & defendant and the said claimant & defendant has obtained a writ of error of the said Court to reverse the said verdict and judgment in the aforesaid suit, and a citation directed to the said United States of America and its attorneys citing and admonishing them to be and appear in the United States Circuit Court of Appeals for the Eighth Circuit, at the City of St. Louis, Missouri, sixty days from and after the date of said citation.

Now, the condition of the above obligation is such, that if the said claimant and defendant shall prosecute said writ of error to effect, and answer all damages and costs if it
2699 fail to make good its said plea, then the above obligation to be void, else to remain in full force and virtue.

(Seal) LEXINGTON MILL & ELEVATOR CO.
(Seal) By E. M. F. Leflang, President.

(Seal) THE BANKERS SURETY CO.
(Seal) Harry L. Mallo, Attorney in fact.

Signed and sealed in presence of
Harry L. Mallo.
R. Janger.

The above bond is hereby approved and ordered to be filed and made a part of the record, this Nov. 11-1910.

SMITH McPHERSON, Judge.

2700 Power of Attorney.

At a legal and lawful meeting of the Board of Directors of The Bankers Surety Company held on the 6th day of July, 1909, the following resolution was adopted:

Whereas, the Bankers Surety Company, in order to facilitate its business of becoming surety on bonds is required to execute bonds in places other than the Home Office, upon application being made for same; and

Whereas, Harry L. Mallo of Omaha, County of Douglas, State of Nebraska, has been appointed Agent and Attorney in Fact for said Company.

Be It Resolved that the said Harry L. Mallo, be and he is hereby appointed a true and lawful Agent and Attorney in Fact for said Company, and as such Agent and Attorney in Fact he be and is hereby authorized to sign, seal and deliver

for and on behalf of the Company any and all bonds and any and all bonds signed, sealed and delivered by him shall be as valid and binding upon the said The Bankers Surety Company to all intents and purposes as fully as if done by the regular officers of the Company in their own proper persons in its behalf.

We, P. W. Harvey, President, and H. B. Sprague, Ass't. Secretary of The Bankers Surety Company hereby certify that the foregoing resolution is a true and correct copy of a resolution passed by the aforesaid meeting of the Board of Directors of said Company.

In Witness Whereof, we have hereunto subscribed our names as President and Ass't. Secretary respectively of the said The Bankers Surety Company and have affixed the corporate seal hereto this 25th day of August, 1909.

(Seal) THE BANKERS SURETY COMPANY,
By P. W. Harvey, President.

Attest: H. B. Sprague,
Ass't. Secretary.

State of Ohio,
County of Cuyahoga—ss.

On this 25th day of August, 1909, personally came before me H. B. Sprague, to me known, who being by me duly sworn did depose and say that he resides in the City of Cleveland, Ohio; that he is the Ass't. Secretary of The Bankers Surety Company the corporation described in and which executed the foregoing instrument, that he knows the seal of said corporation and that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said Corporation and that he signed his name thereto by like order.

(Seal) C. C. LOWE,
Notary Public.

2701 The Bankers Surety Company

Of Cleveland

General Surety and Bonding Business.

The Bankers Surety Co., of Cleveland, Ohio, surety on the foregoing bond, hereby certifies that it has heretofore filed in the proper office of the Attorney-General at Washington, D. C., the following papers:

1. Evidence that it has obtained authority from the Attorney-General of the United States under the Act of August

13, 1904, to act as sole surety on bonds in matters affecting the United States.

2. Evidence of the election of general officers of the Company for the current year, with their names.

3. Evidence of the appointment of an agent for service of process in the Judicial District of Nebraska.

4. Evidence of the authority of the within named Harry L. Mallo ..... and ..... to execute bonds of the character of that annexed hereto on behalf of the Company.

5. A copy of its quarterly financial statement as filed in the Department of Justice.

In Witness Whereof, the said Harry L. Mallo has caused its seal to be hereunto affixed, and these presents to be executed by its proper officers at Cleveland, this 1st day of November, A. D. 1910.

By P. W. HARVEY,
President.

Attest:
M. A. Craig,
Secretary.

2702 On the 17th day of December, 1910, a Petition for Appeal was filed in words and figures as follows, to-wit:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-Five (625) Sacks of Flour. Lexington Mill & Elevator Company, Claimant.

Petition for Appeal.

To the Honorable Judge of the District Court of the United States for the Western Division of the Western District of Missouri:

By leave of Court first had and obtained to file the same herein, this the petition of the Lexington Mill & Elevator Company, the defendant, claimant and appellant herein, respectfully shows as follows:

1. On or about May 19th, 1910, the libellant filed an amended libel in the District Court of the United States for the Western Division of the Western District of Missouri, against six hundred and twenty-five sacks of flour, charging that the said flour contained in said packages and sacks was adulterated within the meaning of the Act of Congress, approved June 30, 1906, entitled, "An Act for preventing the manufacture, sale or transportation of adulterated or mis-

branded, poisonous or deleterious foods, drugs, medicines and liquors and for regulating traffic therein and for other purposes;" and further charging that said flour so contained in said packages and sacks was misbranded within the meaning and intent of said Act of Congress, as by reference to
2703 said amended libel will more fully appear; and praying that process issue out of said court and that the United States Marshal of said District be commanded by order of said court to seize the packages and sacks of flour aforesaid for confiscation, destruction or sale, to be dealt with as the court might order and determine.

2. On or about May 31, 1910, the claimant and defendant, Lexington Mill & Elevator Company, duly appeared and filed its answer to said amended libel denying the allegations of said amended libel and praying that said complaint and libel be dismissed, and that that flour seized under the writ issued by said court be released and restored to said claimant and defendant, and that said claimant and defendant may recover its costs therein expended, as by reference to said answer will more fully appear.

3. On or about June 1, 1910, the libellant filed its reply to said answer, denying the allegations of said answer; as by reference to said reply will more fully appear.

4. On or about June 2, 1910, said cause came on for hearing in said District Court before the Hon. Smith McPherson, then Judge of said court, and a jury duly impanelled in said cause, and evidence was adduced on the part of both parties and such proceedings were had that on July 6, 1910, a verdict was rendered by said jury under the instructions of the court, and a final decree and judgment was made and entered in said cause whereby it was adjudged that the flour seized in said cause be and the same is condemned and confiscated to the United States of America as being food adulterated and misbranded within the meaning of the Act of Congress, approved June 30, 1906, and that all of the same be destroyed by the United States Marshal.

5. The above named claimant and defendant, and the appellant herein, is advised and insists that the said verdict, final decree and judgment are erroneous in that it is found, decreed and ordered therein that said flour is adulterated and misbranded within the meaning of the Act of Congress,
2704 approved June 30, 1906, and is further erroneous in that said flour is condemned and confiscated to the United States of America, and in that it is ordered that all of the same be destroyed by the United States Marshal and that claimant pay the costs of said proceeding, all of which fully appears by

the evidence, records and other proceedings filed and made herein.

6. For these and others reasons the above named claimant and defendant, and appellant herein, feeling itself aggrieved by the decree and judgment made and entered in this cause on July 6, 1910, does hereby appeal from said decree and judgment to the United States Circuit Court of Appeals for the Eighth Circuit for the reasons specified in its assignment of errors, which was filed in this court on November 11, 1910, which said assignment of errors is made a part of this petition for appeal by reference and is filed herewith, and said claimant and defendant and appellant prays that this appeal be allowed, and that citation issue as provided by law, and prays that a transcript of the record, bill of exceptions herein filed and the other proceedings and papers upon which said decree and judgment was based may be sent to the United States Circuit Court of Appeals for the Eighth Circuit at St. Louis, and that said decree and judgment may be reversed, and on said appeal the claimant and defendant and appellant intends to seek a new decision on the law and on the facts upon the pleadings and proofs in said District Court and upon new pleadings and proofs which may be introduced in the United States Circuit Court of Appeals for the Eighth Circuit.

ED. P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant and Defendant Lexington Mill & Elevator Co.

W. C. Scarritt,
A. M. Seddon,
Of Counsel.

Allowed this December 17th, 1910.

ARBA S. VAN VALKENBURGH,
SMITH McPHERSON,
United States District Judge, Western Division of Western District of Missouri.

2705 On the said 17th day of December, 1910, an Order Allowing Appeal was filed and entered of record in words and figures as follows, to-wit:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five (625) Sacks of Flour. Lexington Mill & Elevator Company, Claimant.

Order Allowing Appeal.

On this 17th day of December, 1910, upon the petition for appeal of claimant and appellant, Lexington Mill & Elevator Company, and application therefor, with assignment of errors filed therewith, on this day, praying for the allowance of an appeal in the above entitled cause to the United States Circuit Court of Appeals for the Eighth Circuit, all parties appearing by their respective attorneys, and it appearing to the court that said appellant has filed on November 11, 1910 its assignment of errors as required by the rules of the Circuit Court of Appeals for the Eighth Circuit, and has duly served and filed notice of appeal herein.

It is ordered that the said appeal be and the same is allowed as prayed for, and it is further ordered that a supersedeas bond on said appeal be and the same is hereby fixed in the sum of $2500.00; which said bond is now filed, signed by said appellant Lexington Mill & Elevator Company, as principal, and
American Surety Company of New York, a surety com-
2706 pany, as surety; which bond and surety are now approved by the court and said bond is ordered to be filed and made a part of the record in this cause, and it is further ordered that the said bond shall operate and be a supersedeas bond and shall stay all further proceedings with reference to the judgment and decree in this cause during the pendency of this appeal in the United States Circuit Court of Appeals for the Eighth Judicial Circuit.

And it is ordered that a writ of citation issue in accordance with the allowance of this appeal, which said citation is now and here issued. Thereupon the said claimant and defendant and appellant, Lexington Mill & Elevator Company, files and duly serves in open court the libelant and its attorneys with the citation herein allowed and ordered, which citation is duly accepted by said libelant and its attorneys.

December 17th, 1910.

SMITH McPHERSON,
ARBA S. VAN VALKENBURGH,
Judges.

2707 The Bond for Appeal filed on December 17th, 1910, is in words and figures as follows, to-wit:

United States of America—sct.

Know All Men By These Presents, That we, Lexington Mill and Elevator Company, as principal and American Surety Company of New York, as surety, are held and firmly bound unto United States of America in the full and just sum of Twenty-five Hundred ($2500.00) Dollars to be paid to the said United States of America, to which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally by these presents.

Sealed with our seals, and dated this 16th day of December, in the year of our Lord, one thousand nine hundred and ten.

Whereas, lately at the April term of the District Court of the United States for the Western Division of the Western District of Missouri, in a suit depending in said court between United States of America as libelant and plaintiff, and Six Hundred Twenty-five Sacks of Flour and Lexington Mill and Elevator Company as claimant and defendant, a decree and judgment was rendered against the said claimant and defendant and the said Lexington Mill and Elevator Company has obtained an order allowing an appeal of the said Court to reverse the decree and judgment in the aforesaid suit, and a citation directed to the said United States of America citing and admonishing it to be and appear in the United States Circuit Court of Appeals for the Eighth Circuit, at the city of St. Louis, Missouri, sixty days from and after the date of said citation.

Now, the condition of the above obligation is such, that if the said Lexington Mill and Elevator Company, claimant and defendant, shall prosecute said appeal to effect, and answer all damages and costs if it shall fail to make good its plea, then the above obligation to be void, else to remain in full force and virtue.

2708 (Seal) LEXINGTON MILL & ELEVATOR CO.
By E. L. Scarritt, It's Attorney & Agent.

(Seal) AMERICAN SURETY COMPANY OF NEW YORK,
(Seal) By Robert F. Porter,
Resident Vice President.

Attest:
(Seal) C. E. Hersh,
Resident Ass't Secretary.

Signed and sealed in presence of
Alfred M. Seddon.

The above bond is hereby approved and ordered to be filed and made a part of the record.

ARBA S. VAN VALKENBURG, Judge,
SMITH McPHERSON, Judge.

December 17th, 1910.

2709 On the 3rd day of January, 1911, a Stipulation was filed in words and figures as follows, to-wit:

In the District Court of the United States for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-five Sacks of Flour. Lexington Mill and Elevator Company, Claimant.

It is stipulated and agreed between the parties hereto that Libellant's original exhibits numbered 1-2-3-4-5 and 7 and Claimant's original exhibit numbered 204 may be embodied in the Bill of Exceptions herein and transmitted to the Appellate Court with the same effect as if copied therein.

E. L. SCARRITT,
Attorney for Claimant.

PIERCE BUTLER,
LESLIE J. LYONS,
Attorneys for Libellant.

2710 On the said 3rd day of January, 1911, a Stipulation was filed in words and figures as follows, to-wit:

In the United States District Court for the Western Division of the Western District of Missouri.

United States of America
No. 285. vs.
Six Hundred and Twenty-Five (625) Sacks of Flour. Lexington Mill and Elevator Company, Claimant and Defendant.

Stipulation.

The parties to the above entitled cause stipulate and agree by and between themselves as follows:

The Clerk of the United States Circuit Court of Appeals for the Eighth Circuit is hereby authorized and instructed to omit from the printing of the record in this case the following pleadings, entries and orders.

1. The answer of the Lexington Mill and Elevator Company made to the original libel, filed April 22, 1910.

2. The application of the Lexington Mill and Elevator Company filed April 22, 1910, and the order based on the same.
3. The order setting the case for trial made May 5, 1910.
4. The motion of the Lexington Mill and Elevator Company to strike from the files the amended libel filed May 25, 1910.
5. The order overruling said motion made May 31, 1910.
6. The order adjourning court made June 2, 1910.
7. Same order made June 3, 1910.
8. Same order made June 4, 1910.
9. Same order made June 6, 1910.
10. Same order made June 7, 1910.
11. Same order made June 8, 1910.
12. Same order made June 9, 1910.
2711 13. Same order made June 10, 1910.
14. Same order made June 11, 1910.
15. Same order made June 13, 1910.
16. Same order made June 14, 1910.
17. Same order made June 15, 1910.
18. Same order made June 16, 1910.
19. Same order made June 17, 1910.
20. Same order made June 20, 1910.
21. Same order made June 21, 1910.
22. Same order made June 22, 1910.
23. Same order made June 23, 1910.
24. Same order made June 24, 1910.
25. Same order made June 27, 1910.
26. Order to pay insurance and storage charges made June 28, 1910.
27. Order adjourning court made June 28, 1910.
28. Same order made June 29, 1910.
29. Same order made June 30, 1910.
30. Same order made July 1, 1910.

Of counsel for Appellant,
W. C. Scarritt,
A. M. Seddon.

ED. P. SMITH,
BRUCE S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Attorneys for Claimant and Appellant.

PIERCE BUTLER,
LESLIE J. LYONS,
Attorneys for Libelant and Appellee.

2712 United States of America—Sct.

I, Howard N. McCreary, Clerk of the United States District Court for the Western Division of the Western District of Missouri, do hereby certify the foregoing to be a full and true

copy of the records, proceedings and evidence in the said court in case No. 285, The United States of America, vs. Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill and Elevator Company, Claimant, with the original exhibits in said case, except those which were destroyed by order of Court or omitted by Stipulation of parties, and I further certify that the original citation and writ of error, citation and copy of order allowing appeal are prefixed hereto and returned herewith. All of which is hereby returned and transmitted to the United Statee Circuit Court of Appeals for the Eighth Circuit in accordance with the rules of said Court.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said United States District Court, at my office in Kansas City, in said District, this 6th day of January, A. D. 1911.

Seal
U. S. Dist. Court
Western Division,
Western District
Missouri.

HOWARD N. McCREARY,
Clerk U. S. District Court.

Filed Jan. 7, 1911. John D. Jordan, Clerk.

(Appearance of Counsel for Plaintiff in Error in Cause No. 3533)

On the tenth day of January, A. D. 1911, an appearance of counsel for plaintiff in error was filed in cause No. 3533, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. No. 3533.

LEXINGTON MILL AND ELEVATOR COMPANY, A CORPORATION, Claimant, Plaintiff in Error,
vs.
THE UNITED STATES OF AMERICA.

The Clerk will enter my appearance as Counsel for the Pltf. in Error.

W. C. SCARRITT
A. M. SEDDON
of Counsel.

ED. P. SMITH
BRUCE S. ELLIOTT
A. E. HELM
E. L. SCARRITT

(Endorsed): U. S. Circuit Court of Appeals, Eighth Circuit. No. 3533. Lexington Mill and Elevator Company, a corporation, Claimant, Pltf. in Error, vs. The United States of America. Appearance. Filed Jan. 10, 1911, John D. Jordan, Clerk. Ed. P. Smith, Bruce S. Elliott, A. E. Helm, E. L. Scarritt, W. C. Scarritt, A. M. Seddon, Counsel for Pltf. in Error.

(Appearance of Mr. Leslie J. Lyons as Counsel for Defendant in Error in Cause No. 3533.)

And on the twenty-first day of February, A. D. 1911, an appearance of Mr. Leslie J. Lyons as Counsel for the Defendant in Error was filed in Cause No. 3533, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. No. 3533.

LEXINGTON MILL AND ELEVATOR COMPANY, A CORPORATION, claimant, Plaintiff in Error,
vs.
THE UNITED STATES OF AMERICA.

The Clerk will enter my appearance as Counsel for the Defendant in Error.

LESLIE J. LYONS.

(Endorsed): U. S. Circuit Court of Appeals, Eighth Circuit, No. 3533. Lexington Mill and Elevator Company, a corporation, claimant, Plaintiff in Error, vs. The United States of America. Appearance. Filed Feb. 21, 1911, John D. Jordan, Clerk. Leslie J. Lyons, Counsel for Deft. in Error.

(Appearance of Mr. Pierce Butler as Counsel for Defendant in Error in Cause No. 3533.)

And on the twenty-eighth day of February, A. D. 1911, an appearance of Mr. Pierce Butler as Counsel for the Defendant in Error was filed in Cause No. 3533, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. No. 3533.

LEXINGTON MILL AND ELEVATOR COMPANY, A CORPORATION, claimant, Plaintiff in Error,
vs.
THE UNITED STATES OF AMERICA.

The Clerk will enter my appearance as Counsel for the Defendant in Error.

PIERCE BUTLER,
Special Assistant Attorney General.

(Endorsed): U. S. Circuit Court of Appeals, Eighth Circuit. No. 3533. Lexington Mill & Elevator Company, a corporation, claimant, Plaintiff in Error, vs. The United States of America. Appearance. Filed Feb. 28, 1911, John D. Jordan, Clerk. Pierce Butler, Counsel for Deft. in Error.

(Appearance of Counsel for Appellant in Cause No. 3534.)

And on the seventh day of January, A. D. 1911, an appearance of Counsel for Appellant was filed in Cause No. 3534, in the words and figures following, to-wit:

In the United States Circuit Court of Appeals for the Eighth Circuit.

UNITED STATES OF AMERICA,
vs.
SIX HUNDRED AND TWENTY-FIVE (625) SACKS OF FLOUR, Lexington Mill and Elevator Company, Claimant and Appellant.

Entry of Appearance.

Now come Ed. P. Smith, Bruce S. Elliott, A. E. Helm and E. L. Scarritt, Attorneys, and W. C. Scarritt and A. M. Seddon of Counsel, for Appellant, and hereby enter their appearance herein on this, the day and date of the filing of the transcript of the Record herein brought up by writ of error and appeal, and pray that such appearance be entered in this Court.

W. C. SCARRITT
A. M. SEDDON
Of Counsel

ED. P. SMITH
BRUCE S. ELLIOTT
A. E. HELM
E. L. SCARRITT
Attorneys for Claimant and Appellant.

(Endorsed): No. 3534. United States of America vs. Six Hundred and Twenty-five (625) Sacks of Flour, Lexington Mill and Elevator Company, Claimant and Appellant. Entry of appearance for Appellant. Filed Jan. 7, 1911, John D. Jordan, Clerk. Ed. P. Smith, Bruce S. Elliott, A. E. Helm, E. L. Scarritt, W. C. Scarritt, A. M. Seddon, Counsel for Appellant.

(Appearance of Mr. Leslie J. Lyons as Counsel for Appellee in Cause No. 3534.)

And on the twenty-first day of February, A. D. 1911, an appearance of Mr. Leslie J. Lyons as Counsel for the Appellee was filed in Cause No. 3534, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. No. 3534.

LEXINGTON MILL AND ELEVATOR COMPANY, CLAIMANT, Appellant,
vs.
THE UNITED STATES OF AMERICA.

The Clerk will enter my appearance as Counsel for the Appellee.
LESLIE J. LYONS.

(Endorsed): U. S. Circuit Court of Appeals, Eighth Circuit. No. 3534. Lexington Mill & Elevator Company, claimant, Appellant, vs. The United States of America. Appearance. Filed Feb. 21, 1911, John D. Jordan, Clerk, Leslie J. Lyons, Counsel for Appellee.

(Appearance of Mr. Pierce Butler as Counsel for Appellee in Cause No. 3534.)

And on the twenty-eighth day of February, A. D. 1911, an appearance of Mr. Pierce Butler as counsel for the Appellee was filed in Cause No. 3534, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. No. 3534.

LEXINGTON MILL AND ELEVATOR COMPANY, CLAIMANT, Appellant,
vs.
THE UNITED STATES OF AMERICA.

The Clerk will enter my appearance as Counsel for the Appellee.
PIERCE BUTLER,
Special Assistant Attorney General.

(Endorsed): U. S. Circuit Court of Appeals, Eighth Circuit. No. 3534. Lexington Mill and Elevator Company, claimant, Appellant, vs. The United States of America. Appearance. Filed Feb. 28, 1911, John D. Jordan, Clerk. Pierce Butler, Counsel for Appellee.

(Motion to Dismiss Appeal in Cause No. 3534.)

And on the twentieth day of May, A. D. 1911, a Motion to Dismiss the Appeal in Cause No. 3534 was filed, in the words and figures following, to-wit:

In the United States Circuit Court of Appeals for the Eighth Circuit.

LEXINGTON MILL AND ELEVATOR COMPANY, CLAIMANT, APPELLANT,
vs.
THE UNITED STATES OF AMERICA, APPELLEE.
} Number 3534.

Motion to Dismiss.

Comes now the United States of America by their solicitors, Pierce Butler, Esq., Special Assistant Attorney General of the United States, and Leslie J. Lyons, Esq., United States Attorney for the Western District of Missouri, and move the Court to dismiss the appeal in the above entitled case upon the following grounds, to-wit:

(a) Because an appeal does not lie in said case.

(b) Because appeal is not the method provided by law for review of the proceedings had in said case.

(c) Because the appellant is seeking to have this Court review by appeal, proceedings had in the trial court in the case brought by the United States Attorney for the Western District of Missouri, to seize and confiscate certain merchandise, to-wit; flour, under the provisions of Section 10 of the Food and Drugs Act, approved June 30th, 1906, for the reason that said merchandise and flour was adulterated and misbranded within the meaning of said Act; said Act further providing that the issues in such a case shall be tried before a jury if either party shall so request and the record in this case shows that said case was tried in the lower court before a jury and the issues joined therein were submitted to said jury for its findings of the facts, and further shows that said jury did return its verdicts therein in favor of the United States of America.

(d) Because appeal is not the proper method to review proceedings had in the trial court under the Food and Drugs Act, approved June 30, 1906, which are tried before a jury for its findings of the facts.

(e) Because writ of error is the proper and only method to secure the review of the proceedings had in said case.

(f) Because the proceedings had in said case in the lower court has been brought to this court for review and is now pending before this court upon writ of error.

Wherefore, appellees move that said appeal be dismissed at the cost of the appellant.

PIERCE BUTLER
Special Assistant Attorney General of the United States.

LESLIE J. LYONS
United States Attorney for the Western District of Missouri.
Solicitors for the Appellee.

(Endorsed): In the United States Circuit Court of Appeals for the Eighth Circuit. No. 3534. Lexington Mill & Elevator Co. Claimant, Appellant, vs. The United States of America. Motion to Dismiss. Filed May 20, 1911, John D. Jordan, Clerk. Pierce Butler, Special Assistant Attorney General of the U. S. Leslie J. Lyons, U. S. Attorney for Western District of Missouri. Solicitors for Appellee.

(Order of Submission.)

And on the twenty-ninth day of May, A. D. 1911, in the record of the proceedings of said Circuit Court of Appeals is an Order of Submission in said causes, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. May Term, 1911. Monday, May 29, 1911.

LEXINGTON MILL AND ELEVATOR COMPANY, A CORPORATION, claimant, Plaintiff in Error,
No. 3533. *vs.*
THE UNITED STATES OF AMERICA.

In Error to the District Court of the United States for the Western District of Missouri.

and

LEXINGTON MILL AND ELEVATOR COMPANY, CLAIMANT, Appellant,
No. 3534. *vs.*
THE UNITED STATES OF AMERICA.

Appeal from the District Court of the United States for the Western District of Missouri.

The above entitled causes having been called for hearing in their regular order, argument was commenced by Mr. E. L. Scarritt in behalf of plaintiff in error and appellant, continued by Mr. Pierce Butler and Mr. Leslie J. Lyons in behalf of defendant in error and appellee and concluded by Mr. Ed P. Smith in behalf of plaintiff in error and appellant.

Thereupon, these causes were submitted to the Court on the transcripts of record from said District Court and the briefs of counsel filed herein.

(Opinion.)

And on the twenty-third day of January, A. D. 1913, the opinion of the United States Circuit Court of Appeals for the Eighth Circuit was filed in said causes, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit.

No. 3533.—December Term, A. D. 1912.

LEXINGTON MILL & ELEVATOR COMPANY, claimant, Plaintiff in Error,
vs.
UNITED STATES OF AMERICA, Defendant in Error.
} In Error to the District Court of the United States for the Western District of Missouri.

No. 3534.—December Term, A. D. 1912.

LEXINGTON MILL & ELEVATOR COMPANY, claimant, Appellant,
vs.
UNITED STATES OF AMERICA, Appellee.
} Appeal from the District Court of the United States for the Western District of Missouri.

Mr. Edward P. Smith and Mr. E. L. Scarritt (Mr. Bruce S. Elliott, Mr. A. E. Helm, Mr. C. J. Smyth and Mr. W. C. Scarritt were with them on the brief) for plaintiff in error and appellant.

Mr. Leslie J. Lyons, United States Attorney, and Mr. Pierce Butler, Special Assistant Attorney General, (Mr. William G. Graves was with them on the brief) for defendant in error and appellee.

Before SANBORN, Circuit Judge, and WM. H. MUNGER and MARSHALL, District Judges.

Proceedings by the United States of America to forfeit six hundred and twenty-five sacks of flour—Lexington Mill & Elevator Company, claimant. Trial was had to a jury and verdict rendered in favor of the United States. From the judgment entered thereon, the claimant brings error and appeal.

MARSHALL, District Judge, delivered the opinion of the court.

The Lexington Mill and Elevator Company is a corporation of the State of Nebraska and is engaged in the manufacture of flour at Lexington, Nebraska. On April 1, 1910, it shipped from Lexington to B. O. Terry at Castle, Missouri, six hundred and twenty-five sacks of flour manufactured by it. On April 9, 1910, a libel was filed by the United States under the provisions of Sec. 10 of the Food and Drugs Act, 34 Stat. 768, and a warrant of seizure issued, by virtue of which the flour was seized under the claim that it was adulterated and misbranded in violation of the provisions of that Act. The Lexington Mill & Elevator Company appeared as claimant. It averred that it had sold the flour under a guarantee that it was not adulterated within the meaning of the Food and Drugs Act, and that pursuant to that guarantee it had furnished to the purchaser other flour in lieu of that seized, and had become the owner of the flour in litigation. It was permitted to answer the libel and the case was then tried to a court and jury with the result that the United States had a verdict that the flour was adulterated and misbranded. From the judgment of condemnation rendered on this verdict the claimant prosecutes an appeal and a writ of error. A motion is made to dismiss the appeal and this must be sustained.

The act under which this libel was filed provides in Sec. 10 for the process of libel for condemnation and that "The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand a trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States." This did not change the essential character of the action or make it other than an action at law. As a matter of procedure it has to conform "as near as may be to proceedings in admiralty," but a trial by jury at the demand of either party is provided, and a review of the facts so tried by appeal was not expressly granted. The question as to the proper method of review was decided in this Court in the case of *United States* v. *Seven Hundred and Seventy-nine Cases of Molasses*, 174 Fed. 325. The Supreme Court of the United States has had occasion to pass on the principle involved in cases arising under the Act of July 17, 1862, entitled "An Act to suppress insurrection, to punish treason and rebellion, to seize and confiscate the property of rebels and for other purposes," which provided that the pro-

proceedings against the property seized shall be *in rem* and "shall conform as nearly as may be to proceedings in admiralty or in revenue cases." That court held that a writ of error was the only method of review. The appeal in No. 3534 will be dismissed and jurisdiction will be taken of the writ of error in No. 3533.

Before a consideration of the questions arising on the writ of error a more complete statement of the facts is necessary. The claimant in the manufacture of the flour seized uses the Alsop patented process. A complete description of this process may be found in the opinion of this Court in *Naylor* v. *Alsop Process Co.*, 168 Fed. 911. It is sufficient for the present purpose to say that by it nitrogen peroxide gas is formed by electric discharges. This gas mixed with air is brought into contact with the freshly milled flour, with the result of bleaching it. The method is this: in a small chamber one electrode is fixed; the other is given a reciprocating motion so as to alternately touch and separate from the fixed electrode. A current of high potential is used. The circuit is completed by the contact. Separation of the electrodes results in an arc. The inert nitrogen of the air is oxidized and nitrogen peroxide gas formed. This gas diluted by mixture with air is conveyed to a box or agitator, through which the flour is permitted to fall and the bleaching is at once effected. The chemical reaction seems to be as follows: The nitrogen peroxide gas coming in contact with the moisture of the flour, splits and forms nitric and nitrous acids, both oxidizing agents, but the nitric acid the more powerful. The nitric acid certainly and the nitrous acid probably unite with the coloring matter of the flour and bleach it. Nitrites are formed by the union of the nitrous acid with the bases in the flour and nitrates by the union of the nitric acid with those bases. The nitrates may be disregarded as non-injurious; the nitrites are claimed to be poisonous. The flour seized was subjected to the Griess-Ilsovay test, an extremely delicate test for the detection of the presence of nitrites and was shown to contain nitrites or material reacting as nitrites to the amount of three parts per million. The misbranding is predicated on this. The sacks containing the flour were labeled "L 48, Lexington cream XXXXX, fancy patent. This flour is made of first quality hard wheat." In fact, the flour was milled from Turkey red wheat. This wheat replanted from year to year gradually degenerates and becomes mixed with a wheat of a yellow color, called locally "yellow berry." This admixture with yellow berry deteriorates the quality of the wheat. The wheat in question contained this yellow berry to the extent of from fifteen to twenty-five per cent of its total quantity. Both Turkey red and yellow berry are hard wheats. This wheat graded as No. 2, and this was the best grade of wheat grown or milled in Nebraska or neighboring states. In other sections of the country wheat grading as No. 1 is grown. There can be milled from the same wheat flour of different grades. That flour which contains the entire flour content of the berry is called "straight flour"; patent flour excludes a part of the flour content; that part of the berry nearest the bran coat containing the greater part of the oil and coloring matter. Clear flour is the residue of the flour content of the wheat after taking out the patent flour. The result is that patent flour is whiter than straight and straight is whiter than clear flour.

The jury found separate verdicts, (1) that the flour seized was adulterated, and (2) that it was misbranded. The Court charged the jury: "It is clear that it was intended by Congress to prohibit the adding to the food of any quantity of the prohibited substance. The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water and in articles of food such as ham, bacon, fruits, certain vegetables and other articles does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances. Therefore, the court charges you that the Government need not prove that this flour or food stuffs made by the use of it, would injure the health of any consumer. It is the character, not the quantity of the added substance, if any, which is to determine this case." This was excepted to and was assigned as error. There was evidence tending to prove that flour containing the percentage of nitrites found in the seized flour, might be injurious to health when used as a food for a considerable period, but this was disputed, and the converse supported by substantial testimony. This was the most stubbornly contested issue in the case, and that it was an issue was recognized by the Government at all stages of the trial.

The part of the statute material to a consideration of the correctness of this instruction is found in Sec. 7 of the Act, which reads:

"Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated: * * * *

"In the case of food:

"First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

"Second. If any substance has been substituted wholly or in part for the article.

"Third. If any valuable constituent of the article has been wholly or in part abstracted.

"Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

"Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health * * * * *"

The instruction complained of referred to the charge in the libel under the fifth subdivision just quoted. The trial judge decided that if the added substance was qualitatively poisonous although in fact added in such minute quantity as to be non-injurious to health that it still fell under the ban of the statute; and the distinction is sought to be drawn between substances admittedly poisonous when administered in considerable quantities but which serve some beneficial purpose when administered in small amounts, and those substances which it is claimed never can benefit and which in large doses must injure. This distinction is refined. To apply it must presuppose that science has exhausted the entire field of investigation as to the effect upon the human body of these various substances; that nothing remains to be learned. Otherwise the court would be required to solemnly adjudge today that a certain substance is qualitatively poisonous because it can never serve a useful purpose in the human system only to have this conclusion made absurd by some new discovery. There is no warrant in the statute

for such a strained construction. The object of the law was evidently (1) to insure to the purchaser that the article purchased was what it purported to be, and (2) to safeguard the public health by prohibiting the inclusion of any foreign ingredient deleterious to health. *Hall-Baker Grain Co.* v. *United States*, 198 Fed. 614. The statute is to be read in the light of these objects, and the words "injurious to health" must be given their natural meaning. It will be observed that this paragraph of the statute does not end with the words "added deleterious ingredient" but as a precaution against the idea embodied in the instruction complained of, it says "which may render such article injurious to health." Without these latter words it might, with more force, be argued that deleterious and beneficent ingredients are to be divided into two general classes independent of their particular effect in the actual quantities administered, but the possibility of injury to health due to the added ingredient and in the quantity in which it is added, is plainly made an essential element of the prohibition. The investigation does not stop with the consideration of the poisonous nature of the added substance. It is added to the article of food and the statute only prohibits it if it may render such article—the article of food—injurious to health.

In *French Silver Dragée Co.* v. *United States*, 179 Fed. 824, this question was considered by the Court of Appeals of the Second Circuit. In that case adulteration was charged in confectionery by the addition of silver. The article in question was made of sugar and thinly coated with pure silver. The statute declares that confectionery shall be deemed to be adulterated "if it contain terra alba, barytes, talc, chrome yellow, or other mineral substance of poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt or spiritous liquor or compound or narcotic drug." The element of injury to health is not expressed as a qualification of mineral substance. Silver is admittedly a mineral substance and the act of the defendant was within the letter of the prohibition, but the court construing the statute in the light of the evils it was intended to remedy, the objects sought to be accomplished, held that there was implied in this clause relating to confectionery the very limitation expressed in the paragraph relating to food, and as there was no proof that the coating of silver might render the article injurious to health, it did not fall within the ban of the statute. It was there said: "Stated in another way we think that the history of the Act, the objects to be accomplished by it and the language of all its provisions, require that it should be so interpreted that in the case of confectionery as in the case of foods and drugs, the Government should establish with respect to products not specifically named that they either deceive or are calculated to deceive the public or are detrimental to health."

In *Friend* v. *Matt*, 68 J. P. 589, there was under consideration Sec. 3 of 38–39 Victoria, Chap. 63, which reads: "No person shall mix, color, stain, or powder or alter, or permit another person to mix, color, stain or powder any article of food or any ingredient or material so as to render the article injurious to health." In that case the respondent was charged with selling preserved peas, the color of which had been retained by the addition of sulphate of copper. It was contended that as sulphate of copper in substantial

quantity was injurious to health, the peas so treated with it were within the statute even if the treated peas were not injurious to health. This view prevailed in the trial court, but the judgment was reversed on appeal, Lord Alverstone, Chief Justice, saying: "I have no doubt that in order to convict under Sec. 3, the article of food must be shown to be injurious to health by the addition of some ingredient."

The instruction complained of eliminated a consideration of any possible injurious effect from the use of the flour as an article of food, and was erroneous. We are not unmindful of the contention that the evidence conclusively shows that flour subjected to the bleaching process is injurious to health in some degree, even if its injurious effect is so slight as to be incapable of observation, and that, hence, the instruction we have found to be error was error without prejudice. This contention is founded upon expert testimony as to the result from the taking of nitrites into the human system. It is said that nitrites taken into the human body act upon the coloring matter of the red corpuscles of the blood so as to change the hemoglobin of the blood into methemoglobin. In the language of one of the chief chemical experts of the Government this effect is thus described:

"In the blood stream there are red corpuscles, invisible to the naked eye, which contain a red coloring substance known as hemoglobin, when not combined with oxygen, and when combined with oxygen forming a dissociable compound, oxyhemoglobin. In respiration, the hemoglobin contained in the red corpuscles of the venous blood is brought into the lungs, where it having an affinity for the oxygen, which is one of the gaseous constituents of the air, combines with the oxygen to form oxyhemoglobin. This oxyhemoglobin contained in the red blood corpuscles is then conveyed, through the arterial system to the various parts of the body, and of the terminals of the arterial system, passing through a mass of tissue, it gives up its oxygen, to oxidize the tissues, or materials that may be in solution there, to form carbon dioxide, and to form water, and this oxyhemoglobin is thereby reduced to the condition of hemoglobin which is returned by the venous system to the lungs, to be again oxygenated. That is where the hemoglobin will again combine with oxygen to form oxyhemoglobin, and a given quantity of hemoglobin may serve to carry a given quantity of oxygen to the system. Now, however, if any of this hemoglobin is converted into methemoglobin, which is a compound of oxygen with hemoglobin, in which the oxygen is more firmly combined than in the case of oxyhemoglobin, although the quantity of oxygen is the same, the oxygen is so firmly attached—combined with the hemoglobin—that the vital processes are not sufficiently strong to separate the oxygen from the hemoglobin, nor to use the oxygen to oxidize the tissue and tissue material, to sustain life, and, consequently, it passes through the circulation to the arterial system and the venous system, and continues this cycle until, finally, it is destroyed by the liver. Therefore, a certain quantity of the hemoglobin is rendered inefficient. It no longer functionates as a carrier of oxygen to the system, serves, or acts, as a foreign body in the blood circulation, and, therefore, must be removed. As I have said before, an extra strain is placed upon the liver, in order to remove it, and an extra strain is placed upon the

red blood marrow, in adults, to regenerate the corpuscles, and to replace the corpuscles of the hemoglobin that have been rendered inactive by the action of nitrite, and the formation of methemoglobin." It is also said that the continued presence of nitrites in the system does not develop any tolerance on the part of the body or means of neutralizing its normal action. On the other hand, it was proved that no injurious effect had ever been observed from the use of bleached flour although such flour had been largely used. That nitrites in some or greater amounts are frequently present in potable water, bacon, ham, fruits and certain vegetables, and even in the saliva of both adults and children, and no evil result has been detected. That urea usually present in saliva is, when taken into the stomach, a neutralizer of nitrites, and is a method by which nature averts harm from minute quantities of nitrites so constantly taken into the system. In this conflict of evidence it was essentially a matter for the jury to find the fact under proper instructions. Expert testimony is but evidence. In case of dispute the controversy can not be settled by the judicial knowledge of the court. *U. S.* v. *McGlue*, 1 Curtis, C. C. 1–9; *U. S.* v. *Molloy*, 31 Fed. 19. It cannot be held that the evidence was so conclusive in favor of the Government as to warrant the court in withdrawing this issue from the jury.

The Government also claimed that the seized flour was adulterated within the first and fourth subdivisions of Section 7 before quoted in that a substance, viz.: Nitrites or nitrite reacting material had been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength and that it had been thereby colored in a manner whereby damage or inferiority is concealed. The claimant requested a peremptory instruction in its favor on the issues so tendered by the libel, and assigns the refusal to so instruct as error.

The mixture referred to in the first subdivision must be held to include a chemical compound as well as a mechanical mixture. While this does not accord with the scientific definition of a mixture, yet in common acceptation mixtures and compounds are not discriminated. The evil intended to be remedied by the statute is not limited to a mechanical mixture, but is just as potent when the chemical union results from the two substances with the deleterious effect intended to be prevented by the Act. Similarly, the word "colored" must be held to include any artificially produced change in the natural color of the substance "in a manner whereby damage or inferiority is concealed," even if the change is, as in this case, a removing of color. This is the evident intent of the statute. The Act is essentially remedial, and its evident purpose is not to be defeated by any narrowness of construction. *Johnson* v. *Southern Pacific Co.* 196 U. S. 1. There was evidence that bleached flour did not improve with age in the manner characteristic of unbleached flour, nor did it, as the claimant contended, suddenly take on the condition of properly aged flour which had not been subjected to the bleaching process. That in dough made from bleached flour the gluten never attained the toughness found in dough from unbleached and properly aged flour, and that this toughness was a valuable property in the making of bread. In other words, that as an ultimate result of the mixing of the flour with nitrogen peroxide gas the bread making quality had been injuriously affected. We are not concerned with the opposing testimony. It was for the jury to determine the fact

and the court did not err in refusing to peremptorily instruct for the claimant so far as the claim of adulteration was based on the first subdivision before quoted.

The claim of adulteration under the fourth subdivision presents a different question. There is evidence that flour made from new wheat is darker in color than the flour made from wheat which has gone through an incipient fermentation or sweating process in the stack, and second, through a similar process after threshing. This involves time. Also, that freshly milled flour is darker than it subsequently becomes when kept for a certain period of time. That clear flour is darker than straight flour and straight flour is darker than patent flour. That color is to some extent an index of the quality of the flour, and as such influences the ordinary purchaser. That all grades of bleached flour are whiter than unbleached. In this way the index of color becomes unreliable and a purchaser may take the bleached straight for unbleached patent flour. With the evidence on which the inferiority of the bleached flour is claimed, this it is contended, brings the case within the fourth subdivision of Sec. 7. Opposed to this, it appears that color is at best an uncertain index of quality, and that dealers in flour use other means to ascertain quality. That the color of bleached flour is distinct from that of unbleached flour; the dead white of the bleached is contrasted with the cream white of the unbleached. That bleaching of flour does not obliterate the differences in appearance of different grades of bleached flour. That while patent flour obtains a higher price in the market than straight flour this is not due to any superiority in patent flour from a nutritious standpoint but is due to the fact that bread baked from it is whiter in appearance and, hence, more pleasing to the eye. This esthetic result can be obtained by a certain process of conditioning the wheat and milling the flour. Was it the intention of the statute that this process should have a monopoly? Whiteness in flour is a desirable end in and of itself. Its connection with flour of any particular grade is purely incidental. We are not persuaded that by the bleaching process flour is so colored as to conceal inferiority, or that by it, flour is adulterated within the intent of subdivision four of Sec. 7 of this Act.

The court submitted to the jury the charge contained in the libel that this flour was misbranded, and in effect, instructed the jury that they should find for the Government if the flour was not a patent flour or was not made from first quality hard wheat. This was excepted to and is assigned as error. The contention of the plaintiff in error, as presented to the trial court by various requests for instructions, is that no evidence was introduced tending to prove that the seized flour was not a patent flour, and that the issue tendered by the libel as to the quality of the wheat only went to the question whether it was hard or soft wheat, and that there was no evidence that the wheat was soft. It will serve no useful purpose to review at length the evidence. It suffices to say that it appears that the seized flour contains ninety per cent of the flour content of the wheat; that there is no fixed standard as to the percentage of the flour content which may be properly termed patent flour. When the process first originated a relatively low percentage was called patent flour; as improvements were made in the methods of manufacture a higher percentage was customarily so labeled. Different mills

adopt different standards, varying in accordance with the efficiency of their methods of manufacture. The quality of the wheat milled also enters into the question. The better the wheat the higher the percentage of the flour content that may properly be classed as patent flour. The case of the Government rests entirely on the evidence of some millers that in their opinion no greater percentage than eighty-five per cent can be properly classed as patent flour. This evidence is based upon the experience of those witnesses with different machinery and wheat, and is not predicated upon the claimant's methods of manufacture. There is a concurrence of the witnesses that the term "patent flour" does not connote any fixed or maximum percentage of the flour content of the berry. In other words, by patent flour is meant flour containing less than the total of the flour content of the wheat. Giving those words that signification there was no evidence of falsity, and the claimant was entitled to have that issue withdrawn from the jury by a peremptory instruction in its favor.

It was charged in the amended libel that the seized flour was misbranded in that it was labeled as made of the first quality of hard wheat, whereas, in truth it was made in whole or in part of soft wheat. This charge was denied in the answer. The evidence adduced in its support is that the flour was milled from No. 2 Turkey red wheat and was not of the first quality, but that no soft wheat entered into its composition. The trial court, in substance, instructed the jury that if the wheat was not of the first quality the charge of misbranding was sustained. Fairly construed the libel tendered the issue of soft wheat as distinguished from hard wheat. The pleader assumed that it was incumbent upon him to specify the particular in which the branding was false. If it be permissible to so specify and failing to support the specification, to prove falsity in another particular within the general averment of falsity, then the specification serves but to draw the attention of the defendant from the actual point of controversy and to mislead. It was error to submit the charge of misbranding to the jury.

Errors are assigned on various rulings in the admission of testimony, but as the pages of the record which presented the testimony objected to are not stated in the brief of the plaintiff in error, as required by rule 24 of this Court, we deem it unnecessary to consider them. *Hoge* v. *Magnes*, 85 Fed. 355–8.

The constitutionality of the Food and Drugs Act is attacked by the plaintiff in error and was exhaustively argued. The point of the attack is that the statute as construed by the trial court applied to food products in fact entirely innocuous and which could not possibly be injurious to health nor deceptive. As we have not so interpreted the statute, it is not necessary to express any opinion as to the validity of a statute excluding from interstate commerce harmless food products which are offered for sale without deception.

The judgment below must be reversed and the case remanded for a new trial, and it is so ordered.

Filed January 23, 1913.

(Judgment in Cause No. 3533.)

And on the twenty-third day of January, A. D. 1913, in the record of the proceedings on said Circuit Court of Appeals is a judgment in Cause No. 3533, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. December Term, 1912. Thursday, January 23, 1913.

LEXINGTON MILL AND ELEVATOR COMPANY, a corporation, claimant, Plaintiff in Error,
No. 3533. *vs.*
THE UNITED STATES OF AMERICA.

In Error to the District Court of the United States for the Western District of Missouri.

This cause came on to be heard on the transcript of record from the District Court of the United States for the Western District of Missouri, and was argued by counsel.

On consideration whereof, it is now here ordered and adjudged by this Court, that the judgment of the said District Court, in this cause, be, and the same is hereby, reversed without costs to either party in this Court.

It is further ordered that this cause be, and the same is hereby, remanded to the said District Court with directions to grant a new trial.

January 23, 1913.

(Decree in Cause No. 3534.)

And on the twenty-third day of January, A. D. 1913, in the record of the proceedings of said Circuit Court of Appeals is a decree in Cause No. 3534, in the words and figures following, to-wit:

United States Circuit Court of Appeals, Eighth Circuit. December Term, 1912. Thursday, January 23, 1913.

LEXINGTON MILL AND ELEVATOR COMPANY, claimant, Appellant,
No. 3534. *vs.*
THE UNITED STATES OF AMERICA.

Appeal from the District Court of the United States for the Western District of Missouri.

This cause came on to be heard on the transcript of the record from the District Court of the United States for the Western District of Missouri, and was argued by counsel.

On consideration whereof, it is now here ordered, adjudged and decreed by this Court, that the appeal from the said District Court, in this cause, be, and the same is hereby, dismissed without costs to either party in this Court, for the want of jurisdiction.

January 23, 1913.

(Clerk's Certificate.)

United States Circuit Court of Appeals, Eighth Circuit.

I, John D. Jordan, Clerk of the United States Circuit Court of Appeals for the Eighth Circuit, do hereby certify that the foregoing transcript composed of three volumes, Volume I consisting of pages a

to 1074, inclusive; Volume II consisting of pages 1075 to 2149, inclusive, and Volume III consisting of pages 2150 to 2163, inclusive, contains the transcript of the record from the District Court of the United States for the Western District of Missouri, as printed pursuant to the stipulation of the parties and upon which record said causes were heard, and full, true and complete copies of all the pleadings, record entries and proceedings, including the opinion, in the United States Circuit Court of Appeals for the Eighth Circuit, in certain causes in said Court wherein the Lexington Mill and Elevator Company, Claimant, is Plaintiff in Error, and the United States of America is Defendant in Error, No. 3533, and wherein the Lexington Mill and Elevator Company, Claimant, is Appellant, and The United States of America is Appellee, No. 3534, as full, true and complete as the originals of the same remain on file and of record in my office.

I do further certify that on the twenty-sixth day of March, A. D. 1913, a mandate was issued out of said Circuit Court of Appeals in each of said causes directed to the District Court of the United States for the Western District of Missouri.

In Testimony Whereof, I hereunto subscribe my name and affix the seal of the United States Circuit Court of Appeals for the Eighth Circuit, at office in the City of St. Louis, Missouri, this third day of May, A. D. 1913.

[SEAL.]

JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

○

2170 In the Supreme Court of the United States.

October Term, 1912.

THE UNITED STATES OF AMERICA, PETITIONER,
v.
THE LEXINGTON MILL & ELEVATOR COMPANY, claimant, respondent. } No. 1107.

Stipulation as to return to writ of certiorari.

It is hereby stipulated by counsel for the parties to the above-entitled cause that the certified copy of the record now on file in the Supreme Court of the United States shall constitute the return of the clerk of the United States Circuit Court of Appeals for the Eighth Circuit to the writ of certiorari granted herein.

J. C. MCREYNOLDS,
Attorney General.
E. P. SMITH,
BRUCE ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Counsel for Claimant.

JUNE 2, 1913.

If certified record is incomplete it is to be made so by further stipulation.

(Copy of telegram attached to stipulation.)

WASHINGTON, D. C., *June 7, 1913.*

U. S. ATTORNEY, *Kansas City Mo.:*

Record filed Supreme Court all received from clerk below. You and he know whether it comprises everything in case. Government desires complete record Supreme Court and if incomplete will stipulate to add thereto anything omitted. Stipulation as to return is ordinary formal one always entered into when court grants certiorari. Answer.

MCREYNOLDS.

(Endorsed:) No. 3533. Lexington Mill and Elevator Company, a corporation, claimant, plaintiff in error, vs. The United States of America. Stipulation as to return to writ of certiorari. Filed Jun. 12, 1913. John D. Jordan, clerk.

2171 UNITED STATES OF AMERICA, *ss:*

The President of the United States of America to the honorable the Judges of the United States Circuit Court of Appeals for the Eighth Circuit, greeting:

Being informed that there is now pending before you a suit in which Lexington Mill & Elevator Company, a corporation, claimant,

is plaintiff in error, and the United States of America is defendant in error, No. 3533, which suit was removed into the said Circuit Court of Appeals by virtue of a writ of error to the District Court of the United States for the Western District of Missouri, and we, being willing for certain reasons that the said cause and the record and proceedings therein should be certified by the said Circuit Court of Appeals and removed into the Supreme Court of the United States,

2172 Do hereby command you that you send without delay to the said Supreme Court, as aforesaid, the record and proceedings in said cause, so that the said Supreme Court may act thereon as of right and according to law ought to be done.

Witness the Honorable Edward D. White, Chief Justice of the United States, the 31st day of May, in the year of our Lord one thousand nine hundred and thirteen.

[SEAL.] JAMES H. MCKENNEY,
Clerk of the Supreme Court of the United States.

2173 *Return to writ.*

UNITED STATES OF AMERICA,
Eighth Circuit, ss:

In obedience to the command of the within writ of certiorari and in pursuance of the stipulation of the parties, a full, true, and complete copy of which is hereto attached, I hereby certify that the transcript of record furnished with the application for a writ of certiorari in the case of Lexington Mill and Elevetor Company, a corporation, claimant, plaintiff in error, vs. The United States of America, No. 3533, is a full, true, and complete transcript of all the pleadings, proceedings, and record entries in said cause.

In testimony whereof I hereunto subscribe my name and affix the seal of the United States Circuit Court of Appeals for the Eighth Circuit, at office in the city of St. Louis, Missouri, this twelfth day of June, A. D. 1913.

[SEAL.] JOHN D. JORDAN,
Clerk of the United States Circuit Court of Appeals for the Eighth Circuit.

(Indorsed:) File No. 23682. Supreme Court of the United States, No. 1107, October term, 1912. The United States of America vs. Lexington Mill & Elevator Company. Writ of certiorari. Filed Jun. 12, 1913. John D. Jordan, clerk.

(Indorsement on cover:) File No. 23682. Supreme Court U. S. October term, 1913. Term No. 548. The United States of America, petitioner, vs. Lexington Mill & Elevator Company. Writ of certiorari and return. Filed June 16, 1913.

In the Supreme Court of the United States.

OCTOBER TERM, 1912.

THE UNITED STATES OF AMERICA, PETITIONER,
v.
LEXINGTON MILL & ELEVATOR COMPANY, CLAIMANT, RESPONDENT.

No. ——.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

To the Chief Justice and Associate Justices of the Supreme Court of the United States:

The Attorney General, on behalf of the petitioner, respectfully prays that a writ of certiorari be issued to review the judgment of the Circuit Court of Appeals in this case.

THE QUESTION.

The question involved is whether the food and drugs act prohibits the addition of any poisonous ingredient in any quantity whatever to an article of food, or whether poison may be added to any article of food in the discretion of manufacturers if the quantity added in any one article of food is so small

that it can not be positively demonstrated that the particular article of food may be injurious to health.

The answer depends upon the construction of section 7 of the food and drugs act of June 30, 1906 (34 Stat., 768), the pertinent portion of which reads:

> SEC. 7. That for the purposes of this act an article shall be deemed to be adulterated—
> * * *. In the case of food.
> * * * * * *
> Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health. * * *

STATEMENT OF FACTS.

The libel was filed in the District Court for the Western District of Missouri to condemn 625 sacks of bleached flour, adulterated and misbranded, but only so much of the case is stated as is necessary to show the foregoing question.

The flour was bleached by electricity, by the Alsop process, and the libel charged that the flour was "caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to wit, nitrites or nitrite reacting material, nitrogen, peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances."

The Alsop process was described by the Court of Appeals as follows:

> * * * By it nitrogen peroxide gas is formed by electric discharges. This gas mixed with air is brought into contact with the

freshly milled flour, with the result of bleaching it. The method is this: in a small chamber one electrode is fixed; the other is given a reciprocating motion so as to alternately touch and separate from the fixed electrode. A current of high potential is used. The circuit is completed by the contact. Separation of the electrodes results in an arc. The inert nitrogen of the air is oxidized and nitrogen peroxide gas formed. This gas diluted by mixture with air is conveyed to a box or agitator, through which the flour is permitted to fall and the bleaching is at once effected. The chemical reaction seems to be as follows: The nitrogen peroxide gas coming in contact with the moisture of the flour splits and forms nitric and nitrous acids, both oxidizing agents, but the nitric acid the more powerful. The nitric acid certainly and the nitrous acid probably unite with the coloring matter of the flour and bleach it. Nitrites are formed by the union of the nitrous acid with the bases in the flour and nitrates by the union of the nitric acid with those bases. * * * (Rec., Vol. III, 2156.)

It was admitted on both sides that nitrites are qualitatively poisonous. The Government contended that the existence of these poisonous nitrites in the most minute quantity rendered the flour adulterated, and also that the amount found produced injurious effects upon the consumers of the flour. The claimant contended that the nitrites were contained in such minute quantities that they could have no possible injurious effect upon the consumers of the flour.

The point upon which the writ of certiorari is asked grows out of the charge of the court construing the statute. The court said:

> It is the claim of the Government that if the flour contained any added poisonous or other added deleterious ingredient of a kind or *character* which may render (that is, which is capable of rendering) such article injurious to health, it is adulterated and should be condemned for confiscation.
>
> On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredients, it may not be condemned unless it shall further appear that such added substances are in such quantity that the flour shall be thereby rendered injurious to health.
>
> * * * * *
>
> It is not conceivable that the Congress of the United States when it passed this act intended that producers and vendors might continue to add poisons and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the Government before proceeding to condemnation of an article of food as adulterated must prove that it contains added poisonous or other added deleterious ingredient in such a quantity as would render such article injurious to health. It is known to everyone that there is no method of ascertaining or measuring the effect of the consumption of such substances

> in food upon the public health or upon the health of any particular individual. It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances.
>
> * * * Therefore the court charges you that the Government need not prove that this flour or foodstuffs made by the use of it would injure the health of any consumer. It is the *character*—not the quantity—of the added substance, if any, which is to determine this case. (Rec., Vol. II, pp. 2022, 2023.)

In other words, the trial court held that the statute forbade the addition of any poison to any article of food, even though the quantity be minute and the resulting injury to health from the particular article of food be incapable of measurement.

The Court of Appeals in reversing the case and ordering a new trial, took the opposite view, and held that the poisonous ingredient must be added in such quantity that the jury must find that there is "possibility of injury to health due to the added ingredient and in the quantity in which it is added."

REASONS FOR THE ALLOWANCE OF THE WRIT.

The statute involved is a health statute passed for the protection of the entire country, and the proper construction of the section here in question is of vital importance both to the public and to the manufacturer.

(*a*) The construction of the statute adopted by the Court of Appeals will be exceedingly dangerous to the public.

It will be noticed that the statute was not directed against poisons which occur naturally in foods, but against those which are artificially added. All such poisons were forbidden. If the manufacturer is to be permitted to add poison at his pleasure, so long as the injurious effect of each article to which the poison is added is incapable of measurement, the purpose of the statute is defeated, and considering the large number of different articles of food ordinarily consumed by the individual in the course of a day, each of which may contain poison, there is grave danger of wholesale poisoning.

(*b*) Such construction will render the statute difficult if not impossible of enforcement.

Many articles of food now contain poisons, injurious in themselves, but in such small quantities that it is impossible to trace any particular injury to the consumption of a specific article of food. Is there no protection from such foods? For instance: Is the vendor of milk which contains formaldehyde to be punished if the consumer is made sick by drinking it?

If minute quantities of nitrites may be added to flour, of boric acid to eggs, of chromate of lead to the coffee bean, of sulphate of copper to peas, of arsenic or lead to baking powder, of Martius yellow to macaroni, of wood alcohol to flavoring extracts, so long as it is not provable that enough in each case has been added to possibly injure the health of some one, then the statute is incapable of enforcement.

Again, some of these poisons, as arsenic, accumulate in the system, and a person may ultimately be

seriously poisoned; but there is no remedy, because it can not be said that enough poison was contained in one article eaten at one time to cause injury.

(*c*) If actual injury must be shown, the operation of the law will be uncertain, depending upon the susceptibility of each consumer. Will any standard of resistance be adopted? If so, will it be that of the sickly infant or that of the strong vigorous man?

(*d*) A decision on this paragraph of the statute will be of assistance also in construing other sections of the law. For instance, in *443 Cans of Frozen Egg Product* v. *United States* (226 U. S., 172), decided at this term on jurisdictional grounds, it was contended by plaintiff in error that food could not be condemned as filthy and decomposed under paragraph 6 of the section here involved unless it was so far gone as to be actually injurious to health.

It is respectfully submitted that the proper construction of the statute is a question of so grave a character and of such public importance as to justify the issue of the writ of certiorari.

Counsel for the respondent concur in the petition for the writ.

JAMES C. MCREYNOLDS,
Attorney General.

JESSE C. ADKINS,
Assistant Attorney General.

MAY 1, 1913.

IN THE

Supreme Court of the United States

DECEMBER TERM, 1912.

No. 1107.

THE UNITED STATES OF AMERICA, *Petitioner,*

vs.

LEXINGTON MILL & ELEVATOR COMPANY, *Claimant, Respondent.*

IN RE PETITION FOR WRIT OF CERTIORARI TO REVIEW THE JUDGMENT OF THE CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

To the Chief Justice and Associate Justices of the Supreme Court of the United States:

The defendant in error joins with the Attorney-General in requesting that writ of certiorari be issued to review the judgment of the Circuit Court of Appeals in this cause.

The Questions Presented by the Record.

1. By the record in the Circuit Court of Appeals there were presented the questions as to whether the statute under which the proceeding was brought and the flour sought to be condemned was a valid exercise of the power possessed by Congress under the statute of the United States, and whether the court erred in giving the following instruction:

> "The statute under which this proceeding was brought in the case now being tried is an enactment of the Congress of the United States approved by the then President June 30, 1906 (four years ago). This statute as to its validity is challenged by the claimant herein, but with that question you have no concern, other than to observe it, because the court holds that the Congress of the United States, with the approval of the President, had the power, under the Constitution of the United States, to enact the statute that was enacted, and under which we are proceeding, and the court holds and so directs you that the statute is a valid enactment and to be enforced in any and all cases where the evidence and the facts come within the wording of the statute."

2. If the statute in question is valid, did the trial court err in its instruction to the jury as follows:

> "The word 'poisonous' as an adjective conveys a descriptive meaning and is used in a qualitative sense and not in a quantitive sense. That is, it refers to the kind of the substance and not

to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause 'Which may render such article injurious to health.' It does not say 'Which does render such article injurious to health.' But manifestly it was the purpose of Congress to include in this distinction all ingredients of a poisonous character to which in their essential nature might be ascribed the tendency to affect health injuriously."

3. If the statute in question is valid, did the trial court err in its instruction to the jury as follows:

"It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances."

4. If the statute in question is valid, did the trial court err in its instruction to the jury as follows:

"The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food such as flour, because the statute condemns the adding of poisonous substances. Therefore the court charges you that the Government need not prove that this flour or food-stuffs made by the use of it would injure the health of any consumer. It is the character—not the quantity—of the added substance, if any, which is to determine the case."

5. If the statute in question is valid, did the trial court err in refusing to instruct the jury as requested, as follows:

> "The law does not prohibit the adding of nitrites or nitrite reacting material in flour, and the jury cannot find for the Government or against the claimant even if it is shown that nitrites or nitrite reacting material was added to the flour in question, unless they believe from a preponderance of the evidence that such addition, if any, rendered such flour injurious to the health of those who might consume the bread or other foods made from said flour."

The defendant in error joins with the Attorney-General in respectfully submitting that the validity of the statute in question and its proper construction are questions of so grave a character and of such public importance as to justify the issuance of the writ of certiorari.

LEXINGTON MILL & ELEVATOR COMPANY,
By EDWARD P. SMITH,
BAUER S. ELLIOTT,
A. E. HELM,
E. L. SCARRITT,
Its Attorneys.

In the Supreme Court of the United States.

OCTOBER TERM, 1912.

THE UNITED STATES OF AMERICA, petitioner, *v.* LEXINGTON MILL & ELEVATOR COMPANY, claimant, respondent.	No. 1107.

On Writ of Certiorari to the United States Circuit Court of Appeals for the Eighth Circuit.

MOTION BY THE UNITED STATES TO ADVANCE.

The Attorney General, on behalf of the United States, moves to advance this cause under section 5 of rule 26, because the case is one in which the United States are concerned and which involves a matter of general public interest.

The libel was filed in the District Court for the Western District of Missouri to condemn 625 sacks of flour bleached by electricity by the so-called Alsop process, which charged that the flour was—

> caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to wit, nitrites or nitrite reacting material, nitrogen,

> peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances,

and that the flour was both adulterated and misbranded.

The question is whether the Food and Drugs Act prohibits the addition of any poisonous ingredient in any quantity whatever to an article of food, or whether poisons may be added to any article of food in the discretion of manufacturers if the quantity added in any one article of food is so small that it can not be positively demonstrated that the particular article of food may be injurious to health.

There are numerous other cases involving all manner of foods in which the principle of the decision of the Circuit Court of Appeals in this case is involved. For this reason, as well as the great importance of the present case in itself, the motion to advance is made.

We are authorized to state that counsel for respondent concurs.

JAMES C. MCREYNOLDS,
Attorney General.

JESSE C. ADKINS,
Assistant Attorney General.

JUNE 9, 1913.

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In the Supreme Court of the United States.

OCTOBER TERM, 1913.

THE UNITED STATES OF AMERICA, petitioner,
v.
THE LEXINGTON MILL AND ELEVATOR Co., respondent.
} No. 548.

CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

BRIEF ON BEHALF OF THE UNITED STATES.

I.

In April, 1910, The United States filed a libel (subsequently amended) in the District Court, Western District of Missouri, under section 10 of the food and drugs act of June 30, 1906 (34 Stat., 768, ch. 3915; see Appendix A), seeking seizure and condemnation of 625 sacks of flour shipped from Lexington, Nebr., to Castle, Mo., and there found in original, unbroken packages in possession of Terry, the consignee. (R., 6, 11, 16.)

The flour was seized (R., 9, 10); the consignee did not appear; but the Lexington Mill & Elevator Co., the manufacturer and vendor, appeared as claimant and answered (R., 15).

Upon the issues raised by the pleadings, there was trial to a jury (R., 11), a verdict for the Government (R., 21, 22), a decree of condemnation (R., 22). On writ of error, the Circuit Court of Appeals reversed this action and directed a new trial. (R., 2162.) The case is here upon certiorari. (R., 2166.)

The amended libel charged that the flour was both adulterated and misbranded. The adulteration charges were made on subdivisions 1, 4, and 5 of section 7 relating to food, and alleged that, as a result of the so-called Alsop process for bleaching, the flour (1) contained poisonous or deleterious ingredients which might render it injurious to health; (2) was mixed, colored, and stained, whereby damage and inferiority were concealed; and (3) had a substance mixed and packed with it so as to reduce, lower, and injuriously affect its quality and strength. (R., 13, 14.)

The answer admitted the treatment, denied adulteration, and set up the unconstitutionality of the act. (R., 15–18.)

There were two separate special verdicts, one that the flour was adulterated, the other that it was misbranded. (R., 21, 22.)

In the 168 assignments of error (R., 2097–2139) claimant maintained that the District Court erred, first, in certain rulings on the admission of evidence; second, in instructions as to adulteration; third, in those as to misbranding; and fourth, in holding the act constitutional. What assignments in fact were relied on does not appear.

Claimant failed to specify the pages of the record containing the testimony objected to (R., 2162), and, as this was in violation of its Rule 24, the Court of Appeals refused to examine the action of the District Court in respect thereto.

The issues as to misbranding are not dicussed herein.

This brief is confined to two subjects, (1) the correctness of instructions given and refusal to give those requested by claimant on adulteration, and (2) the constitutionality of the statute.

The Court of Appeals held that, before food can be deemed adulterated, within subdivision 5, section 7, by the addition of poison, the Government must establish its existence *in sufficient quantity* to render food injurious to health; and that it does not suffice merely to show the presence of added poison of an injurious *character*. (R., 2158.) Under that construction the statute does not forbid the artificial combination with food of a minute quantity of poison, harmful in nature; the prohibition only applies when the quantity is such that,

if the food is eaten, an observable injury would probably result. The correctness of this interpretation is the point of chief importance.

No error was found in the instructions on the issue as to whether the flour had been mixed, colored, and stained to conceal damage and inferiority under subdivision 4, section 7; but the Court held the weight of evidence on this point was in favor of claimant (R., 2161), thus overruling the lower Court.

The Court of Appeals held further that the jury should determine whether a substance had been so mixed and packed with the flour as to reduce, lower, or injuriously affect its quality and strength within subdivision 1, section 7, and no error was found here. (R., 2160–2161.)

The constitutionality of the act was not affirmatively ruled upon. (R., 2162.)

The Government maintains—

(1) That the interpretation of subdivision 5, section 7, by the Court of Appeals was erroneous.

(2) That that Court erred in passing upon the weight of evidence as to concealment of inferiority.

(3) That it was right in sustaining the District Court on the issue as to the reduction of, lowering, and injuriously affecting the quality and strength of the flour by mixing and packing.

(4) That the food and drugs act is constitutional.

II.

THE SEIZED FLOUR WAS ADULTERATED WITHIN SUBDIVISION 5, SECTION 7, OF THE FOOD AND DRUGS ACT RELATING TO FOOD.

Allegation of adulteration.

The amended libel alleges that the seized flour was adulterated—

> (c) In that by the treatment as aforesaid (the Alsop process) the said flour has been caused to contain added poisonous or other added deleterious ingredients, to wit, nitrites or nitrite reacting material, nitrogen peroxide, nitrous acid, nitric acid, and other poisonous and deleterious substances, which may render such flour injurious to health. (R., 14.)

Alsop process.

It is not disputed that the flour was subjected to this process. (Libel, R., 12, 13; answer, pars. 5 and 10; R., 16, 17.)

The libel alleges that it consists "of the generation by means of electricity of nitrogen peroxide gas, which is mixed with atmospheric air, and the mixture brought into contact with the flour" (R., 12–13), and the answer, that it "consists of generating in rapid succession a flaming electric discharge in a current of air in proximity to such electric discharge, and in conducting the air as modified by such discharge into the presence of the flour as it is being continuously passed through a revolving reel or agitator." (Par. 10, R., 17.)

There is a description of the treatment in *Naylor* v. *Alsop Process Company* (168 Fed., 911), which was a patent suit; and the evidence in the case at bar tends to show that the patent specifications relating to the effect produced are untrue. (R., 159, 160, 838, 839, 986, 987, 1300, 1450, 1458, 1776, 1777.) Further detailed descriptions are given in the testimony. (R., 42, 43, 47, 48, 58, 975–977.)

The Court of Appeals also described the process. (R., 2156.)

Evidence as to poison.

Nitrogen peroxide (NO_2 or N_2O_4) is a corrosive gas of a dark brown or brownish-red color and has a pungent, characteristic odor. (R., 43, 621, 888, 891.) The Alsop process generates this gas and brings it into contact with the moisture content of the flour; the resulting chemical reaction produces nitric and nitrous acids. (R., 47, 48, 119, 152, 325–326, 861, 891, 1653, 1739–1741.) These combine with bases in the flour, forming nitrites and nitrite reacting materials of various kinds. (R., 58, 61, 152, 892, 920.) Some of the nitrite reacting material is nitrogen peroxide, which does not combine chemically with bases in the flour, but remains intermingled with it as a gas. (R., 715–722, 811.)

Witnesses testified that analyses showed the presence in this flour of nitrites, or nitrite reacting material, in the proportion of from 1.8 to 2.3 parts, computed "as nitrogen," or from 5.904 to 7.544 parts, computed as nitrogen peroxide, per

million. (R., 150, 232, 236.) Nitrous acid was extracted from bread made from the flour. (R., 712–714.)

There was specific evidence that nitrites and nitrite reacting materials are poisonous (R., 43, 47, 290, 326, 621, 626, 809–811, 816, 891, 897, 898, 933–934, 1657), that their addition in any quantity to flour tends to make it, when converted into bread, injurious to the health of consumers and that it did render the seized flour injurious. (R., 293, 619–626, 816–818, 869, 893, 894, 897, 898, 933–934.) There was further testimony to the effect that no food not in a state of putrefaction normally contains nitrites. (R., 284–289, 625.)

Testimony for the Government shows that bleaching necessarily added to the flour substances of such poisonous character that the *ingestion of any quantity, however slight,* would produce injurious physiological effects, and that by their addition the flour was rendered injurious to health. (R., 43, 47, 289–890, 326, 621–623, 626, 809, 811, 816, 891, 897, 898, 933–934, 1653–1658.)

On the other hand, witnesses for claimant testified that there is no substance which can be recognized as a poison in small doses or can be said to be poisonous unless there is enough to produce symptoms either from a single dose or from extended use (R., 1063, 1099, 1285, 1289, 1462–1466, 1570, 1795, 1808–1811); that all foods are poisonous if consumed in sufficiently large quantities (R., 1096, 1461, 1544); that the

existence of poison in a food must be determined by some physiological effect (R., 1539); that flour bleached by the Alsop process contains no nitrous or nitric acid or nitrites (R., 1031, 1456, 1467, 1507, 1519, 1792); that nitrites taken internally disappear in the process of digestion and do not affect the blood (R., 1039, 1274, 1275, 1506, 1598, 1792–1795, 1841); that nitrite reacting material has been found in naturally aged, unbleached flour (R., 1020, 1451); that nitrites are found in the air, in saliva, and in articles of food other than flour (R., 1024, 1025, 1535, 1597, 1627, 1837, 1921); and that the process of bread making causes a reduction of the quantity of nitrite reacting material in bleached flour. (R., 1025–1026, 1453.)

Instructions.

The jury was instructed (Appendix B) (*a*) that the statute prohibits the addition of any substance so poisonous in its nature as to render food capable of injuring health, and (*b*) that if the evidence showed that the flour by bleaching had been caused to contain in any quantity a poisonous substance of that character, to find it adulterated. (R., 2021–2024.)

Claimant's contention that the Government must show the presence of added poisonous substances in such quantities as to cause demonstrable injury is fairly reflected in its requests for instructions numbered 11 and 16—refused by the Court. (R., 2009, 2011.)

Opinion of Court of Appeals.

The gist of the opinion on this branch of the case (Appendix C) is that the District Court erred in construing the statute to prohibit the presence in food of an added *qualitatively* poisonous substance, of a character capable of injuring health, thereby taking from the jury the question whether the poisonous substance was in such *quantity* that the food containing it might injure health. (R., 2157–2160.

Point at issue.

In section 6 of the act it is provided that—

> The term "food," as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

This flour was "food" within that definition.

It was sufficiently shown to submit to the jury, that bleaching by the Alsop process caused this flour to "contain" more than 7½ parts of nitrites or nitrite reacting materials per million; or, otherwise stated, that each 100 pounds *contained* a little more than 5¼ grains of such materials, computed as nitrogen peroxide.

It was further shown that nitrites and nitrite reacting materials are "poisonous" and capable of *rendering an article injurious to health.* The bleaching device manifestly causes an *addition,* within the statutory provision, of a poisonous ingredient.

Upon the Government's construction, there was plainly evidence which required submission to the jury of the issues under subdivision 5 of section 7. If it is unnecessary to show that the *quantity* of added poisonous substances is *enough* to injure, then the Court of Appeals was wrong and the District Court right on this branch of the case.

Meaning of subdivision 5.

The Government submits that it was the intention of Congress to prohibit a manufacturer from combining with food ingredients any poisonous ingredient whatsoever of a quality, kind, or character capable of rendering the finished product injurious to health. Congress was dealing with substances *foreign* to foods, not those *naturally* in them. It is matter of public notoriety that *some* manufacturers are inclined to approach the danger line as near as possible without suffering penalties provided by the criminal law.

Congress intended to create a sweeping and absolute prohibition, applicable to all qualitatively poisonous substances, irrespective of quantity, and thus to inhibit manufacturers from experiment, discretion, or guesswork. To construe the statute otherwise would nullify "any." That word is comprehensive and universal, excluding the idea that quantity may be ascertained or varied.

That "any" was used in order to prevent *all* poisonous ingredients from being added to food is further manifest from the description of the pro-

hibited ingredients, as those "which *may* render such article injurious to health." The word "may," in common acceptance, expresses contingency, possibility, or probability, and in a statute ordinarily carries no positive or imperative significance.

If the statute is ambiguous that interpretation ought to be adopted which will carry out its general purpose, to safeguard health. An absolute prohibition more certainly effects this than a partial one limited to cases where specific injury is proved.

The act, as construed by the Government, initiates no novel policy. Prior to its passage, statutes of Pennsylvania, Nebraska, and Ohio prohibited just what the Government now asks this Court to say the Federal statute forbids (Laws of Pennsylvania, 1895, p. 317; Laws of Nebraska, 1897, ch. 99, p. 387; Laws of Ohio, 1890, p. 248; *Commonwealth* v. *Kevin,* 202 Pa. 23; *Lansing* v. *State,* 73 Nebr. 124; *State* v. *Hutchinson,* 55 Ohio St. 573).

If "adulteration" under subdivision 5 depends upon the *quantity* of poisonous material added, consumers of food prepared with bleached flour are deprived of protection, unless the quantity is so great that impairment of health can be clearly traced to the food made from that flour. So interpreted, the fifth subdivision, for all practical purposes, is valueless; for no statute is needed to protect the public from foods generally known to be harmful.

Furthermore, claimant's interpretation would render subdivision 5 impossible of uniform application and probably unenforceable. The statute fixes no standard of purity for foods. The effect of poisons varies widely. A well, strong, mature, and normal person may safely ingest what would be fatal to one otherwise constituted. The diversity in powers of resistance is incalculable. The same poison may affect an individual differently under changed conditions. (R., 1852.) If quantity be the test juries would enforce different requirements as to the amount of poison necessary to impair health. The impracticability of such a test is a strong reason for concluding that Congress intended to forbid the introduction of any poisonous substance capable of injuring health.

As interpreted by the Government, the fifth subdivision is reasonable and accomplishes a cardinal purpose of the act. Being remedial the statute should be liberally construed. (*United States* v. *Corbett*, 215 U. S., 233; *New York, New Haven & Hartford R. Co.* v. *Interstate Commerce Commission*, 200 U. S., 361, 391; *Johnson* v. *Southern Pacific Co.*, 196 U. S., 1.)

Cognate clauses of statute.

In construing part of a statute regard may had to its entire purview. The fourth subdivision of section 8, under the head of food, contains this proviso:

> *Provided*, That an article of food which does not contain any added poisonous or de-

> leterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: * * *.

The cases specified have no bearing on the point in hand. It is clear that determination whether a food comes within this proviso is made dependent upon the poisonous or deleterious quality of its added ingredients, and not upon the demonstrated poisonous or deleterious character of the food itself. Conversely foods which contain such ingredients are to be deemed adulterated.

Out of caution, section 7 specially provides that confectionery is adulterated—

> If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

This provision was before the Court of Appeals for the Second Circuit in *French Silver Dragee Co.* v. *United States* (179 Fed., 824). The presence in confectionery of silver was successfully relied upon by the Government at the trial to establish adulteration; but the Court disposed of the case under the rule of *ejusdem generis,* holding that the statute should be interpreted so that—

> * * * in the case of confectionery, as in the cases of food and drugs, the Government should establish, with respect to products not specifically named, that they either deceive, or are calculated to deceive, the pub-

> lic or are detrimental to health. (179 Fed. 828.)

The *French Silver Dragee Co.* case was cited below to support the proposition that proof of observable injury to health is necessary to sustain a charge of adulteration under the fifth subdivision of section 7. It is submitted, however, that the Court in that case looked only to the character and kind, not quantity, of the ingredients. It held that the statute must be interpreted to mean—

> (2) That the use in confectionery of chrome yellow or other poisonous mineral substance or poisonous color or flavor makes it unlawfully adulterated.
>
> (3) That the use in confectionery of any ingredient whatsoever which is deleterious or detrimental to health makes it unlawfully adulterated.

The Court said further:

> It is true that under this construction the third class of cases would include the second. "Any ingredient detrimental to health" undoubtedly includes all poisonous substances. (179 Fed., 828.)

This decision plainly makes the poisonous or deleterious character of ingredients the test for deciding whether confectionery is adulterated.

Legislative history of statute.

While the meaning of the statute may be arrived at by the ordinary rules of construction, an examination of its history fortifies the Government's argument.

The report of the House Committee on Interstate and Foreign Commerce contains the following:

> One of the principal objects of the bill is to prohibit in the manufacture of foods intended for interstate commerce the addition of foreign substances poisonous or deleterious to health. The bill does not relate to any natural constituents of food products which are placed in the foods by nature itself. * * * If, however, poisonous or deleterious substances are added by man to the food product, then the bill declares the article to be adulterated and forbids interstate traffic. (H. Rept. 2118, 59th Cong., 1st sess., p. 6.)

This indicates that one object of the act was the exclusion from food of all substances, irrespective of quantity, that are capable of injuring health.

Senate bill 88, which became the food and drugs act, originally considered in the Senate, had the following provision:

> In the case of liquors, an article shall be deemed adulterated if it contain any added ingredient of a poisonous or deleterious character. (Cong. Rec., 59th Cong., 1st sess., vol. 40, pt. 1, p. 897.)

A proposed amendment which was rejected struck out the word "added" before "ingredient," so that as amended the clause would have read:

> In the case of liquors, an article shall be deemed adulterated if it contain any ingredient of a poisonous or deleterious character. (Cong. Rec., 59th Cong., 1st sess., vol. 40, pt. 3, pp. 2644, 2770.)

In the debate the chairman of the committee in charge of the bill, said:

> The word "added" simply means that nothing shall be added to the poisons already existing in the substance. Take any substance. Poisons may be extracted from fruit, from the kernel of the peach, from acids contained in fruits.
>
> * * *.
>
> The word "added," after very mature consideration by your committee, was adopted because of the fact that there is to be found in nature's products, as she produces them, poisonous substances, to be determined by analysis. Nature has so combined them that they are not a danger or an evil—that is, so long as they are left in the chemical connection in which nature has organized them; but when they are extracted by the artificial processes of chemistry they become poison. * * *
>
> So, in order to avoid the threat that those who produce a perfectly legitimate article from a natural product might be held liable because the product contained nature's poison it was thought sufficient to provide against the adding of any new substance that was in itself a poison, and thus emphasizing the evils of existing conditions in nature's product. * * * There is a limitation on the word "added." It does not prevent you from adding ingredients to combinations or to single substances; it prevents you from adding poisons or deleterious ingredients; that is all. (Cong. Rec., vol. 40, pt. 2, p. 1131, and pt. 3, pp. 2647, 2758.)

From the foregoing it appears to have been the intention of Congress to include in the prohibitions of the statute all poisonous or deleterious ingredients not naturally inherent in foods.

Court decisions.

In none of the District Court cases deciding food products to be adulterated, under the fifth subdivision of section 7, has the Government been required to prove that the quantity of the added poisonous or deleterious ingredient was sufficient to produce observable effects or symptoms or that health had been observably impaired by the consumption of the food.

This view is illustrated by what was said by the District Court for the Northern District of Illinois, in *United States* v. *1,950 Boxes of Macaroni* (181 Fed., 427):

> The question is whether the article proceeded against "contains any added poisonous * * * ingredient which may render it injurious to health." The proof shows macaroni to be composed of wheat flour and water; that to change its natural color and make its appearance more inviting, Martius yellow was added; that this coloring matter is not an ingredient of macaroni, serves no purpose other than to change its color, and is a poison which will kill.
>
> It is the duty of the court to give the act a fair and reasonable construction for the accomplishment of its object. That object is the exclusion from interstate commerce of

> food products so adulterated as to endanger health. And where, as here, it clearly appears that a poisonous substance wholly foreign to the food product has been added to it solely to mislead and deceive, the court is under no duty to endeavor to protect the offender against loss from destruction of the adulterated article by indulging in hair-splitting speculation as to whether the amount of poison used may possibly have been so nicely calculated as not to kill or be of any immediate serious injury * * *.

To the same effect is the charge in *United States* v. *Mayfield*, Northern District of Alabama (177 Fed., 765, 766).

Likewise, it has been held in the following unreported cases, printed in official publications of the Department of Agriculture, styled "Notices of Judgment," that the quality, not the quantity, of the prohibited substances must be considered: *United States* v. *Rosebrock & Co.*, Southern District of New York, Notice of Judgment 825; *United States* v. *Koca Nola Co.*, Northern District of Georgia, Notice of Judgment 202.

The Court of Appeals cites *Friend* v. *Matt* (68 J. P., 589) to support the rule it adopted. That case arose under sec. 3, 38–39 Vict., ch. 63, which provides "that no person shall mix, color, stain, or powder, or permit any other person to mix, color, stain, or powder any article of food or any ingredient or material so as to render the article injurious to health." Unlike our act, the English statute

prohibits manipulation of an article of food in such manner as to "render the article injurious to health." The contrast is between "so as to render" and "which may render."

The case of *French Silver Dragee Co.* v. *United States* (179 Fed., 824), also relied upon by the Court of Appeals, is discussed, *supra,* p. 13.

Having regard to the wording of the statute, its purpose, the evil to be remedied, and the intent of the Congress, it is submitted that the interpretation the Court of Appeals placed upon the fifth subdivision was erroneous and that the instructions of the trial Court as to its force and effect correct. There was evidence that bleaching added to this flour ingredients so poisonous as to be liable to render it injurious to health. The issue was fairly presented, and the verdict that the flour was adulterated ought not to be disturbed.

III.

THE COURT OF APPEALS ERRED IN REVIEWING THE WEIGHT OF EVIDENCE AS TO WHETHER THE FLOUR WAS ADULTERATED WITHIN SUBDIVISION 4 OF SECTION 7 OF THE FOOD AND DRUGS ACT RELATING TO FOOD.

Charges in libel.

Concealment of inferiority, as a result of the Alsop process, was charged under subdivision 4 of section 7. The specifications are, (1) the flour had been made to resemble flour aged and conditioned

by natural processes; (2) it had been given the appearance of a better grade than it really was; and (3) that it was of a grade inferior to patent flour and flour made from the first quality of hard wheat, bleaching having caused it to resemble patent flour and that made from first quality hard wheat. (R., 13–14.)

Bleaching conceals newness and imparts color of better grade.

The common test of the quality of flour, and according to some a sure and invariable one, is color. (R., 82, 513, 518, 550, 605, 1252–1253.) The whiter it is, the greater its demand and price. (R., 81, 514, 550, 985–986, 1126, 1255.)

Flour from old wheat, not bleached, is whiter than the product of new. (R., 56, 451, 488.) For a considerable time after milling, unbleached flour, made from either old or new wheat, increases in whiteness if stored under normal conditions. (R., 56, 90–95, 451, 467, 488, 542, 605, 991, 992, 1133.)

Natural aging produces chemical changes affecting the constituents of flour, especially gluten, making it more elastic, capable of absorbing more water and producing bread of superior color, flavor, and odor. (R., 54–56, 236, 488, 666, 991, 1133, 1257.)

That new flour is inferior to flour naturally aged and that both color and quality are improved by natural aging are undisputed facts.

The seized flour was freshly milled. (R., 138, 986.) Millers testified that bleaching conceals newness. (R., 426, 451, 488, 991–992, 1132–1133, 1179, 1256–1258, 1352, 1414, 1434.) Its object is to whiten flour and give it the appearance of that naturally aged. R., 1126, 1133, 1179, 1255–1258, 1352, 1414, 1434, 1439–1441.) Nitric acid, generated by contact of nitrogen peroxide with the water content, acts on the coloring matter and effects the bleaching. (R., 62–63, 154–157, 733–734, 803–809, 861–862.)

Some of claimant's witnesses testified that bleaching of all grades except the lowest ("Red Dog") makes them resemble higher and better ones. (R., 1134, 1144, 1179, 1188, 1236, 1254, 1328–1330, 1439.) Similar testimony was given for the Government. (R., 424–426, 511–514, 541–543, 654, 668.)

Voluminous testimony shows that bleaching injures the elasticity of gluten and other ingredients of flour, and bread made therefrom is less digestible and in other respects inferior to that made from unbleached flour. (R., 61, 72–76, 157–159, 168 et seq., 203 et seq., 227, 233–235, 322–323, 411, 427, 452–453, 468, 484–485, 545, 587–588, 654, 697, 699, 777, 778.) The proof also shows that the chemicals injected by bleaching impair or neutralize flour constitutents, thereby destroying the capacity of flour to improve after milling. (R., 61, 605, 654–655, 698, 833–834.)

Inferior flour made to resemble patent.

Mill products of wheat are flour, bran, and shorts. Ordinarily, there are three grades of flour: "Straight," which includes all, "patent," which contains less than the whole, and "clear," which is the residue of the flour content. (R., 140.) "Patent" is the highest priced and best grade. (R., 81.) It is whiter than "straight" and therefore more valuable. Similarly, "straight" is whiter and more valuable than "clear." (R., 81, 424, 571, 1252.)

While no exact percentage was established, there was evidence that, according to usages among millers, buyers, and bakers, and in the market generally, it is not proper to call flour "patent" if it contains more than 80 to 85 per cent of the flour content of wheat. (R., 388, 424–425, 470, 488, 511, 541–542, 601–602, 664.) The flour seized contained 90 per cent. (R., 123.)

One method of testing for patent flour is to burn it and ascertain the ash content. (R., 152–153.) If this exceeds forty-four one-hundredths of 1 per cent, it is not "patent." (R., 153–154, 230.) This flour contained, according to one witness, fifty-three one-hundredths, and according to two others fifty-seven one-hundredths, of 1 per cent of ash. (R., 152, 232, 777.)

Another test is to wash out the gluten. This was applied to some of the flour and the gluten found less elastic than that of patent flours. (R., 777.)

The same witness ascertained that the flavor of this flour was not so good as that of unbleached "patents." (R., 777–778.)

Witnesses testified that it was impossible to make a patent flour out of the wheat from which this flour had been milled. (R., 469–470, 511, 654.)

Flour milled from inferior wheat made to appear milled from first-quality.

"Turkey hard" is a high grade of wheat grown, among other places, in Kansas and Nebraska. (R., 679.) "Yellow berry," an inferior grade, is sometimes referred to as deteriorated "turkey hard." (R., 679–681.) It is softer, incapable of making as strong a flour, and is cheaper. (R., 1261–1262.)

Hard wheat which contains as much as 10 per cent of yellow berry is not first quality. (R., 428, 510.) The flour seized was milled from wheat containing from 10 to 30 per cent, and claimant's head miller refused to testify that it did not contain as much as from 40 to 50 per cent, of yellow berry. (R., 123, 124.)

There was also testimony that the flour was inferior to that made from first quality hard wheat, because it contained yellow berry, which bleaching conceals. (R., 428, 679–680, 1134, 1178, 1261–1264, 1326.)

Instructions.

The jury was instructed (Appendix D) that if the evidence showed that, by means of bleaching, either (*a*) the inferiority of freshness or newness

was concealed, or (*b*) the flour was given the appearance of a better grade or quality than it really was, or (*c*) if inferior to patent or to that made from first quality of hard wheat, the flour was caused to have the appearance of patent or of flour made from first quality of hard wheat, they must find it adulterated. (R., 2021, 2024–2025.)

Claimant requested a peremptory instruction, numbered 3, which was refused. (R., 2007.)

Opinion of Court of Appeals.

After reciting some of the evidence, the Court (Appendix E) held the weight of the proof to be in favor of claimant, saying—

> We are not persuaded that by the bleaching process flour is so colored as to conceal inferiority, or that by it flour is adulterated within the intent of subdivision 4 of section 7 of this act. (R. 2161.)

No power to review jury's findings.

It is the theory of the libel that subdivision 4 prohibits the changing of the color of flour so as to make poorer simulate better grades; to give flour produced from wheat just harvested the appearance of that made from the same wheat after aging and conditioning; to make newly milled flour simulate naturally aged; to raise the product of a poor mill, operated by a careless miller using the bleaching process, to the marketing level of the product of a good mill, operated by a skillful miller

not using such process, and thus to enable the former to sell an inferior article for a better one.

The statute declares adulterated all articles of food which are mixed, colored, coated, or stained in a manner whereby damage or inferiority is concealed. Adulteration exists when either damage or inferiority is concealed. The Government's case under the fourth subdivision rests upon the contention that bleaching conceals inferiority.

"Inferiority" is a term of comparison. The question is whether this flour was mixed, colored, coated, or stained in a manner to make it appear better than it really was. The statute contemplates that, to ascertain adulteration, the apparent quality of an article shall be compared with its real. This was the view of the trial Court.

There was abundant testimony showing that this flour was freshly milled, and by bleaching had been made to resemble flour naturally aged and conditioned. There was also evidence that new flour is inferior to that naturally aged in color, elasticity of gluten, and bread-making qualities; that bleaching gives the color of a better grade; that the flour was milled from wheat containing a considerable percentage of yellow berry, and therefore inferior to that made from first quality hard wheat; and that bleaching caused it to appear to be patent and milled from first quality hard wheat.

The issues under the fourth subdivision were fairly presented. There was ample proof on which

to base the verdict. The case was entertained below on a writ of error. Under these circumstances the Court of Appeals was without power to review the evidence. (*Behn* v. *Campbell*, 205 U. S., 403, 407; *Lancaster* v. *Collins*, 115 U. S., 222, 225; *Chicago & Northwestern Railway Co.* v. *Ohle*, 117 U. S., 123, 129.)

IV.

THE COURT OF APPEALS WAS CORRECT IN HOLDING THAT THERE WAS NO ERROR IN SUBMITTING TO THE JURY THE CHARGES OF ADULTERATION UNDER SUBDIVISION 1 OF SECTION 7 OF THE FOOD AND DRUGS ACT RELATING TO FOOD.

The adulteration charged under subdivision 1 of section 7 (R., 13) is fairly stated in the following instruction:

> Upon this point the substance of the charges made by the Government is, (*a*) that the capacity of the flour to change and improve as it would have changed and improved if aged by natural processes has been destroyed by the treatment of the flour by the Alsop process, whereby substances known as nitrites or nitrite-reacting material have been mixed and packed with the flour, and (*b*), that by direct action of such process the elasticity of the gluten has been lessened and impaired so as to injuriously affect the bread-making qualities of the flour, and (*c*), that other constituents of the flour have been by such process injuriously affected so as to reduce, lower, and impair its bread-making quality. (R., 2019–2020.)

The Court instructed the jury that if the evidence sustained any of these charges they must find the flour adulterated (R., 2019–2020), and refused to grant a peremptory instruction, numbered 2, requested by claimant. (R., 2007.)

There was ample evidence to support each charge. (R., 61, 72, 76, 157–159, 169, et seq., 203 et seq., 227, 233–235, 322–323, 411, 427, 452–453, 468, 484–485, 545, 587–588, 605, 654–655, 697–699, 777, 778, 833–834.)

The Court of Appeals said:

> The mixture referred to in the first subdivision must be held to include a chemical compound as well as a mechanical mixture. While this does not accord with the scientific definition of a mixture, yet in common acceptation mixtures and compounds are not discriminated. The evil intended to be remedied by this statute is not limited to a mechanical mixture, but is just as potent when the chemical union results from the two substances with the deleterious effect intended to be prevented by the act. Similarly, the word "colored" must be held to include any artificially produced change in the natural color of the substance "in a manner whereby damage or inferiority is concealed," even if the change is, as in this case, a removing of color. * * * It was for the jury to determine the fact, and the court did not err in refusing to peremptorily

instruct for the claimant so far as the claim of adulteration was based on the first subdivision before quoted. (R., 2160–2161.)

V.

FOOD AND DRUGS ACT CONSTITUTIONAL.

Claimant attacked the validity of the act on the ground (1) that it is not an exercise of the power to regulate interstate commerce, and (2) that, as construed by the trial Court, it authorizes the condemnation and forfeiture of wholesome substances.

No argument is needed to refute the first contention. *Hipolite Egg Co.* v. *United States* (220 U. S., 45).

The second is based on the postulate that the trial Court's construction of subdivision 5 of section 7 restricts commerce in harmless articles.

It is sufficient answer that the trial Court construed that subdivision as including foods containing added ingredients which *may* render them injurious to health, but did not bring under the prohibition articles containing added ingredients which merely render such articles harmless.

If the Act, as construed by the trial Court, would necessarily lead to the forfeiture of wholesome articles, it is not thereby rendered invalid. Congress is the arbiter as to what shall be excluded from interstate commerce, and neither the construction of the statute nor its constitutionality is affected by the fact that some wholesome products

might be forfeited. It frequently happens that legislation designed to eradicate an evil operates to prevent transactions otherwise lawful. (*Booth* v. *Illinois*, 184 U. S., 425; *Otis* v. *Parker*, 187 U. S., 606; *Powell v. Pennsylvania*, 127 U. S., 678.) Nor is the disregard of the specific question of wholesomeness an objection. (*Buttfield* v. *Stranahan*, 192 U. S., 470; *Powell* v. *Pennsylvania*, 127 U. S., 678.)

The constitutionality of the food and drugs act has been attacked on almost every conceivable ground, but without success. (*Hipolite Egg Co.* v. *United States*, 220 U. S., 45; *United States* v. *Johnson*, 221 U. S., 488; *Shawnee Milling Co.* v. *Temple*, 179 Fed., 517; *United States* v. *74 Cases Grape Juice*, 181 Fed., 629; *United States* v. *420 Sacks of Flour*, 180 Fed., 518; *United States* v. *Heinle Specialty Co.*, 175 Fed., 299; *United States* v. *100 Cases of Tepee Apples*, 179 Fed., 985.)

Each issue as to adulteration was properly left to the jury, and its verdict is conclusive. The jury was instructed to find in favor of the Government if, as a matter of fact, the flour was shown to be adulterated in any of the ways or methods alleged in the libel. (R., 2027.) By force of section 10 of the act the Government was entitled to a decree of condemnation and forfeiture for adulteration, irrespective of the charges of misbranding.

The judgment of the Court of Appeals should be reversed, and the decree of the District Court, condemning the seized flour, affirmed.

J. C. McREYNOLDS,
Attorney General.
FRANCIS G. CAFFEY,
Solicitor Department of Agriculture.

December, 1913.

Appendix A.

EXTRACTS FROM THE FOOD AND DRUGS ACT (24 STAT., 768).

Sec. 7. That for the purposes of this act an article shall be deemed to be adulterated: * * *

In the case of confectionery:

If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

In the case of food:

First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength. * * *

Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health. * * *

Sec. 8. * * * That for the purposes of this act an article shall also be deemed to be misbranded: * * *

In the case of food: * * *

Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases: * * *

Sec. 10. That any article of food, drug, or liquor that is adulterated or misbranded within the meaning of this act,

and is being transported from one State, Territory, district, or insular possession to another for sale, or, having been transported, remains unloaded, unsold, or in original unbroken packages, * * * shall be liable to be proceeded against in any district court of the United States within the district where the same is found and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this act, the same shall be disposed of by destruction or sale, as the said court may direct.

Appendix B.

INSTRUCTIONS TO JURY ON ISSUES UNDER SUBDIVISION 5 OF SECTION 7 OF FOOD AND DRUGS ACT.

The Government charges adulteration of this flour in violation of the fifth subdivision relating to food of the section of the statute under which we are proceeding. The words of that provision are as follows: "If it (in this case meaning flour) contains any added poisonous or other added deleterious ingredient which may render such article (in this case meaning flour) injurious to health."

The substance of the charge found in the amended libel is that by the treatment of the flour by the Alsop process it has been caused to contain added poisonous and other added deleterious ingredients which may render the same injurious to health, to wit, nitrites, nitrite-reacting material, nitrogen peroxide gas, nitrous acid, nitric acid, and other poisonous and deleterious ingredients and substances.

It is the claim of the Government that if the flour contain any added poisonous or other added deleterious ingredient of a kind or *character* which may render (that is, which is capable of rendering) such article injurious to health it is adulterated, and should be condemned for confiscation.

On the other hand, it is the claim of the claimant that even though the flour contain added poisonous or other added deleterious ingredient it may not be condemned unless it shall further appear that such added substances are in such quantity that the flour shall be thereby rendered injurious to health.

This statute was enacted for the purpose of benefiting and protecting the consumer, which in this case means those who eat bread and cake and pastry and gravy and other products made from wheat flour. This was the purpose

that Congress had in mind when it enacted this statute. And in enforcing this statute in proper cases the fact that it will subject the millers to some expense, or the fact, if it be a fact, that it will enable the millers to market their flour more readily or at a better price, is entitled to no consideration and will receive no weight at your hands.

It will be noted that the act does not say "any added poison," but does say "any added poisonous ingredient." The word "poisonous" as an adjective conveys a descriptive meaning and is used in a qualitative sense, and not in a quantitative sense. That is, it refers to the kind of substances, and not to the quantity of the substance. This idea or meaning is further emphasized and rendered more certain by the qualifying clause "which *may* render such article injurious to health." It does not say "which *does* render such article injurious to health," but manifestly it was the purpose of Congress to include in this distinction all ingredients of a *poisonous character* to which, in their essential nature, might be ascribed the tendency to affect health injuriously.

This statute is essentially a remedial one, for the correction of known or supposed abuses with respect to the adulteration of food and other articles of human consumption. It is primarily a statute of prevention. Its meaning is made clear when its purpose is known and borne in mind.

It is not conceivable that the Congress of the United States, when it passed this act, intended that producers and vendors might continue to add poisonous and other injurious substances to food so long as the quantity added was not sufficient to produce observable poisonous or injurious effects upon the health of consumers, nor is it conceivable that Congress intended to require that the Government, before proceeding to condemnation of an article of food as adulterated most prove that it contains added poisonous or other added deleterious ingredient in such a quantity as *would* render such article injurious to health. It is known to everyone that there is no method of ascertaining or measuring the effect of the consumption of such substances in food upon the public health or upon the health of any particular individual.

It is clear that it was intended by Congress to prohibit the adding to food of any quantity of the prohibited substances.

The fact that poisonous substances are to be found in the bodies of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food, such as flour, because the statute condemns the adding of poisonous substances. Therefore the court charges you that the Government need not prove that this flour or foodstuffs made by the use of it would injure the health of any consumer. It is the *character*—not the *quantity*—of the added substance, if any, which is to determine this case.

The flour seized in this case is an article of food within the meaning of the act of Congress. And if the treatment of the same by the Alsop process caused it to contain any added poisonous or other added deleterious ingredient of a kind or character which may render the same injurious to health, then it is adulterated and must be condemned.

It is admitted that this flour was treated by the Alsop process for the purpose of bleaching or whitening, and the evidence establishes that nitrogen-peroxide gas was employed for that purpose, and further establishes that that gas, nitrous acid, nitric acid, and nitrites of the kind which may be produced by such treatment are poisonous and deleterious substances, and that these substances when taken in sufficient quantities will produce poisonous action or death.

It appears from the evidence in this case that the bleaching process imparts and adds to flour substances referred to in the testmony as nitrites or nitrite-reacting material, and such substances were imparted to the flour seized in this case by the bleaching process. It further appears from the evidence that such substances so imparted or added to to this flour are qualitively both poisonous and deleterious; that is to say, that these substances are of a poisonous and deleterious character.

It is well known that wheat flour is not eaten raw. There is evidence in this case that tends to show that during the process of making bread nitrites or nitrite-reacting material

contained in the flour is lessened and may be eliminated under some circumstances, but it is also well known that wheat flour is used for the making of other articles of food—biscuits, dumplings, pastry, cake, crackers, gravy, and perhaps other articles of food, which may be consumed by all classes of persons, the young, the old, the sick, the well, the weak, the strong; and I charge you that it is right for you in reaching your verdict to take these facts into consideration together with all the other proven facts and circumstances in the case. (R., 2021–2024.)

Appendix C.

EXTRACT FROM OPINION OF COURT OF APPEALS ON ISSUES UNDER SUBDIVISION 5 OF SECTION 7 OF FOOD AND DRUGS ACT.

"Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health * * *."

The instruction complained of referred to the charge in the libel under the fifth subdivision just quoted. The trial judge decided that if the added substance was qualitatively poisonous although in fact added in such minute quantity as to be noninjurious to health that it still fell under the ban of the statute; and the distinction is sought to be drawn between substances admittedly poisonous when administered in considerable quantities but which serve some beneficial purpose when administered in small amounts, and those substances which it is claimed never can benefit and which in large doses must injure. This distinction is refined. To apply it must presuppose that science has exhausted the entire field of investigation as to the effect upon the human body of these various substances; that nothing remains to be learned. Otherwise the court would be required to solemnly adjudge to-day that a certain substance is qualitatively poisonous because it can never serve a useful purpose in the human system only to have this conclusion made absurd by some new discovery. There is no warrant in the statute for such a strained construction. The object of the law was evidently (1) to insure to the purchaser that the article purchased was what it purported to be, and (2) to safeguard the public health by prohibiting the inclusion of any foreign ingredient deleterious to health. (*Hall-Baker Grain Co.* v. *United States*, 198 Fed., 614.) The statute is to be read in the light of these objects, and the words "injurious to health" must

be given their natural meaning. It will be observed that this paragraph of the statute does not end with the words "added deleterious ingredient," but as a precaution against the idea embodied in the instruction complained of, it says "which may render such article injurious to health." Without these latter words it might, with more force, be argued that deleterious and beneficent ingredients are to be divided into two general classes independent of their particular effect in the actual quantities administered, but the possibility of injury to health due to the added ingredient and in the quantity in which it is added is plainly made an essential element of the prohibition. The investigation does not stop with the consideration of the poisonous nature of the added substance. It is added to the article of food and the statute only prohibits it if it may render such article—the article of food—injurious to health.

In *French Silver Dragee Co.* v. *United States* (179 Fed., 824), this question was considered by the Court of Appeals of the Second Circuit. In that case adulteration was charged in confectionery by the addition of silver. The article in question was made of sugar and thinly coated with pure silver. The statute declares that confectionery shall be deemed to be adulterated "if it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug." The element of injury to health is not expressed as a qualification of mineral substance. Silver is admittedly a mineral substance and the act of the defendant was within the letter of the prohibition, but the court construing the statute in the light of the evils it was intended to remedy, the objects sought to be accomplished, held that there was implied in this clause relating to confectionery the very limitation expressed in the paragraph relating to food, and as there was no proof that the coating of silver might render the article injurious to health, it did not fall within the ban of the statute. It was there said: "Stated in another way we think that the history of the act, the objects to be accomplished by it and the language of all its provisions, require that it should be so interpreted that in the case of confectionery, as in the

case of foods and drugs, the Government should establish with respect to products not specifically named that they either deceive or are calculated to deceive the public or are detrimental to health."

In *Friend* v. *Matt* (68 J. P., 589) there was under consideration Sec. 3 of 38-39 Victoria, Chap. 63, which reads: "No person shall mix, color, stain, or powder or alter, or permit another person to mix, color, stain, or powder any article of food or any ingredient or material so as to render the article injurious to health." In that case the respondent was charged with selling preserved peas, the color of which had been retained by the addition of sulphate of copper. It was contended that as sulphate of copper in substantial quantity was injurious to health, the peas so treated with it were within the statute even if the treated peas were not injurious to health. This view prevailed in the trial court, but the judgment was reversed on appeal, Lord Alverstone, chief justice, saying: "I have no doubt that in order to convict under Sec. 3, the article of food must be shown to be injurious to health by the addition of some ingredient."

The instruction complained of eliminated a consideration of any possible injurious effect from the use of the flour as an article of food, and was erroneous. We are not unmindful of the contention that the evidence conclusively shows that flour subjected to the bleaching process is injurious to health in some degree, even if its injurious effect is so slight as to be incapable of observation, and that, hence, the instruction we have found to be error was error without prejudice. This contention is founded upon expert testimony as to the result from the taking of nitrites into the human system. It is said that nitrites taken into the human body act upon the coloring matter of the red corpuscles of the blood so as to change the hemoglobin of the blood into methemoglobin. In the language of one of the chief chemical experts of the Government this effect is thus described:

"In the blood stream there are red corpuscles, invisible to the naked eye, which contain a red coloring substance known as hemoglobin when not combined with oxygen and when combined with oxygen forming a dissociable compound, oxyhemoglobin. In respiration, the hemoglobin contained

in the red corpuscles of the venous blood is brought into the lungs, where it, having an affinity for the oxygen, which is one of the gaseous constituents of the air, combines with the oxygen to form oxyhemoglobin. This oxyhemoglobin contained in the red blood corpuscles is then conveyed through the arterial system to the various parts of the body, and of the terminals of the arterial system, passing through a mass of tissue, it gives up its oxygen, to oxidize the tissues, or materials that may be in solution there, to form carbon dioxide, and to form water, and this oxyhemoglobin is thereby reduced to the condition of hemoglobin, which is returned by the venous system to the lungs to be again oxygenated. That is where the hemoglobin will again combine with oxygen to form oxyhemoglobin, and a given quantity of hemoglobin may serve to carry a given quantity of oxygen to the system. Now, however, if any of this hemoglobin is converted into methemoglobin, which is a compound of oxygen with homoglobin, in which the oxygen is more firmly combined than in the case of oxyhemoglobin, although the quantity of oxygen is the same, the oxygen is so firmly attached—combined with the hemoglobin—that the vital processes are not sufficiently strong to separate the oxygen from the hemoglobin, nor to use the oxygen to oxidize the tissue and tissue material, to sustain life, and, consequently, it passes through the circulation to the arterial system and the venous system, and continues this cycle until finally it is destroyed by the liver. Therefore a certain quantity of the hemoglobin is rendered inefficient. It no longer functionates as a carrier of oxygen to the system, serves, or acts, as a foreign body in the blood circulation, and, therefore, must be removed. As I have said before, an extra strain is placed upon the liver in order to remove it, and an extra strain is placed upon the red blood marrow in adults to regenerate the corpuscles and to replace the corpuscles of the hemoglobin that have been rendered inactive by the action of nitrite and the formation of methemoglobin."

It is also said that the continued presence of nitrites in the system does not develop any tolerance on the part of the body or means of neutralizing its normal action. On the other hand, it was proved that no injurious effect had

ever been observed from the use of bleached flour although such flour had been largely used. That nitrites in some or greater amounts are frequently present in potable water, bacon, ham, fruits, and certain vegetables, and even in the saliva of both adults and children, and no evil result has been detected. That urea usually present in saliva is, when taken into the stomach, a neutralizer of nitrites, and is a method by which nature averts harm from minute quantities of nitrites so constantly taken into the system. In this conflict of evidence it was essentially a matter for the jury to find the fact under proper instructions. Expert testimony is but evidence. In case of dispute the controversy can not be settled by the judicial knowledge of the court. (*U. S.* v. *McClue*, 1 Curtis, C. C., 1–9; *U. S.* v. *Molloy*, 31 Fed., 19.) It can not be held that the evidence was so conclusive in favor of the Government as to warrant the court in withdrawing this issue from the jury. (R., 2157–2160.)

Appendix D.

INSTRUCTIONS TO JURY ON ISSUES UNDER SUBDIVISION 4 OF SECTION 7 OF FOOD AND DRUGS ACT.

It appears from the evidence in this case that wheat flour when freshly made is inferior to what that same flour will become by the lapse of time and processes of natural aging and conditioning; that the inferiorities of freshness or newness manifest themselves in inferiority of color, of elasticity of the gluten, and of the quality of other ingredients which affect its value for bread-making purposes; and it further appears that by the lapse of time and aging and conditioning by natural processes wheat flour will improve for a period of time, stated to be from two to four months, or thereabouts; and that such improvement increases the value of the flour and makes it lighter in color; and it further appears that this bleaching process makes the freshly milled wheat flour appear to be like and to simulate the appearance which that same flour will assume after natural aging and conditioning. And it further appears that this flour when seized was not naturally aged or conditioned, but was newly milled flour.

On this branch of this particular issue it is for you to say, in the light of all these facts and all the evidence, whether or not the inferiority of freshness or newness was concealed by the bleaching process.

On the second branch of this particular issue I charge you that, if treatment by the Alsop process has given to this flour the appearance of a better grade or quality of flour than it really is, you should find for the Government that it is adulterated. And upon the third branch of this particular issue, I charge you that if you should find from the evidence that this flour is of a grade of flour inferior to patent flour, or is a flour inferior to flour made from the first quality hard wheat, and that bleaching by the Alsop

process has caused it to have the appearance either of a patent flour—as that term will be explained to you in this charge—or the appearance of a flour made from the first quality of hard wheat, then you must find for the Government that this flour is adulterated. * * *

There is much dispute in the evidence as to the meaning of the phrase "patent flour." Some of the witnesses for the Government testified in substance that the phrase had a well-defined meaning among millers, bakers, and in the flour market generally, and that it means that the flour so-called patent flour is less than the total flour content of the wheat, and includes what is known in the milling process as the purified middlings, but it is not claimed by the Government nor any of the witnesses that patent flour is or contains any definite or specific percentage of the total flour content of the wheat. On the other hand, some of the witnesses for the claimant testified that the phrase "patent flour" has no definite or recognized meaning among millers, bakers, flour dealers, or elsewhere, and that flours containing the total flour content of the wheat, excepting low grade, sometimes called "red dog," are labeled and sold in the market as "patent flour."

It is the law that if the phrase "patent flour" has a well-known and well-understood meaning generally among millers, flour purchasers, bakers, and in the flour markets of the country, then such meaning as so understood is to be attributed to that phrase. In other words, patent flour is the kind of flour that it is generally understood to be by millers, bakers, flour purchasers, and in the markets generally. You are therefore to determine, first, Has the phrase "patent flour" any well-defined and well-known meaning? And, second, Is the flour seized that kind of flour, namely, "patent flour." (R., 2021, 2024–2025.)

Appendix E.

EXTRACT FROM OPINION OF COURT OF APPEALS ON ISSUES UNDER SUBDIVISION 4 OF SECTION 7 OF FOOD AND DRUGS ACT.

The claim of adulteration under the fourth subdivision presents a different question. There is evidence that flour made from new wheat is darker in color than the flour made from wheat which has gone through an incipient fermentation or sweating process in the stack; and, second, through a similar process after thrashing. This involves time. Also, that freshly milled flour is darker than it subsequently becomes when kept for a certain period of time. That clear flour is darker than straight flour and straight flour is darker than patent flour. That color is to some extent an index of the quality of the flour, and as such influences the ordinary purchaser. That all grades of bleached flour are whiter than unbleached. In this way the index of color becomes unreliable, and a purchaser may take the bleached straight for unbleached patent flour. With the evidence on which the inferiority of the bleached flour is claimed, this, it is contended, brings the case within the fourth subdivision of Sec. 7. Opposed to this, it appears that color is at best an uncertain index of quality and that dealers in flour use other means to ascertain quality. That the color of bleached flour is distinct from that of unbleached flour; the dead white of the bleached is contrasted with the cream white of the unbleached. That bleaching of flour does not obliterate the differences in appearance of different grades of bleached flour. That while patent flour obtains a higher price in the market than straight flour, this is not due to any superiority in patent flour from a nutritious standpoint, but is due to the fact that bread baked from it is whiter

in appearance and hence more pleasing to the eye. This esthetic result can be obtained by a certain process of conditioning the wheat and milling the flour. Was it the intention of the statute that this process should have a monopoly? Whiteness in flour is a desirable end in and of itself. Its connection with flour of any particular grade is purely incidental. We are not persuaded that by the bleaching process flour is so colored as to conceal inferiority or that by it flour is adulterated within the intent of subdivision 4 of Sec. 7 of this act. (R., 2161.)

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DEC 30 1913
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CLERK

IN THE

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1913.

THE UNITED STATES OF AMERICA,
Petitioner,
vs.
THE LEXINGTON MILL AND ELEVATOR CO.,
Respondent.
No. 548.

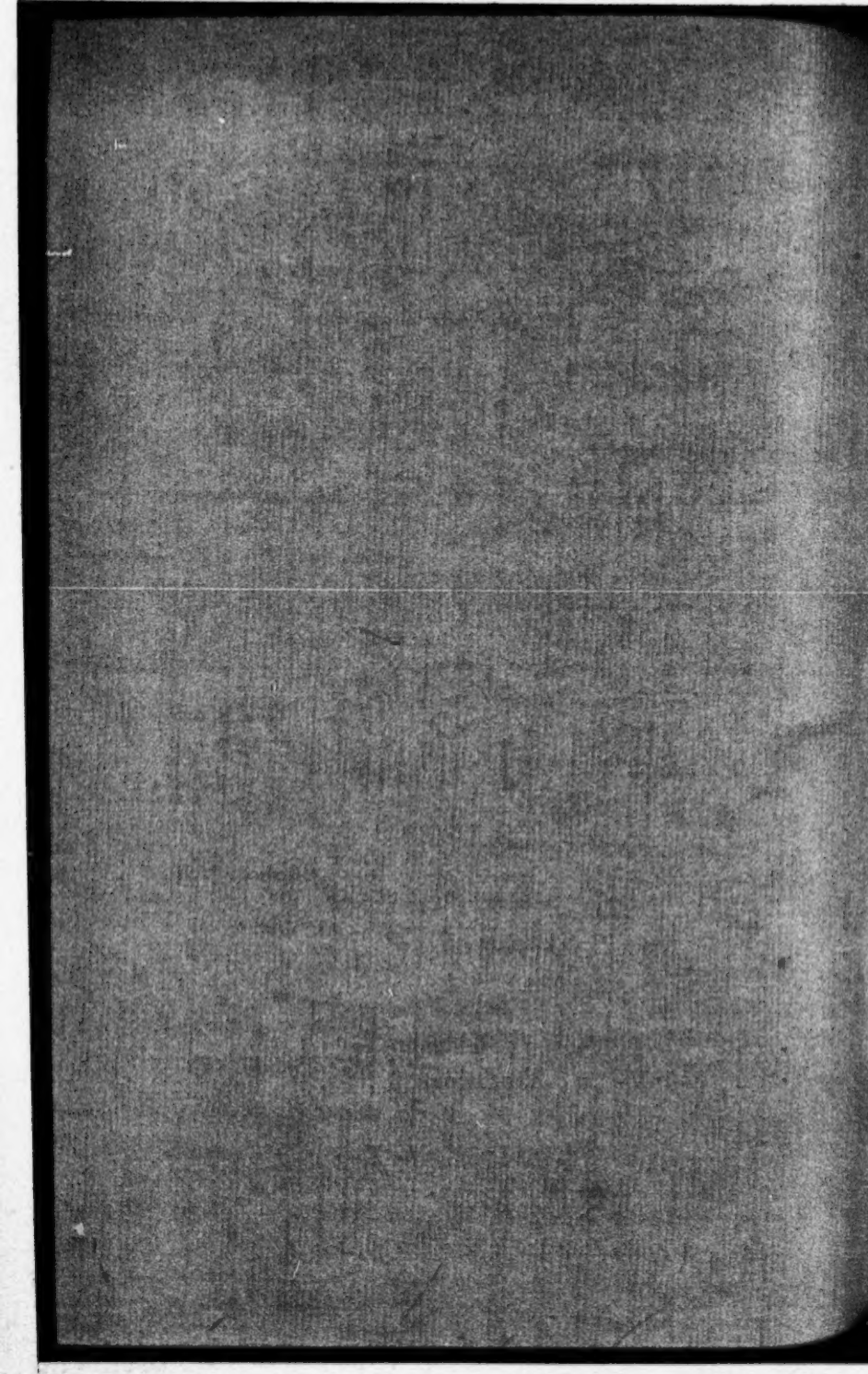
CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

BRIEF ON BEHALF OF THE RESPONDENT.

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Respondent.

No. 548.

CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE EIGHTH CIRCUIT.

BRIEF ON BEHALF OF THE RESPONDENT.

STATEMENT.

This is a proceeding by the United States of America to forfeit six hundred and twenty-five sacks of flour manufactured and sold by the Lexington Mill & Elevator Company, claimant. Trial was had to a jury and verdict rendered in favor of the United States. From the judgment entered thereon the claimant brought error and appeal to the United States Circuit Court of

Appeals for the Eighth Circuit. The appeal was dismissed. On review of the case under the writ of error the judgment below was reversed, and the case remanded for a new trial. The Government petitioned for a writ of *certiorari*, in which the claimant and respondent filed a joinder in petition, which petition was granted, and the case is now before this Court for review under the writ of *certiorari*.

The respondent herein, claimant and plaintiff in error in the court below, and hereinafter termed respondent, is a corporation organized under the laws of the State of Nebraska, and operates a flour mill at Lexington, Dawson County, Nebraska.

In February, 1910, it sold to B. O. Terry, a retail grocer at Castle, Missouri, a carload of flour. On April 1, 1910, it shipped from Lexington, Nebraska, to B. O. Terry, at Castle, Missouri, six hundred and twenty-five sacks of flour manufactured by it. After its arrival at Castle, it was unloaded, placed in a storeroom of Mr. Terry, and a portion thereof (twenty-eight sacks) sold by him to his customers. On April 9, 1910, a libel was filed by the United States in the United States District Court at Kansas City, under the provisions of Section 10 of the Food and Drugs Act, 34 Stat., 768, and a warrant of seizure issued, by virtue of which the flour was seized under the claim that it was adulterated and misbranded in violation of the provisions of that Act. This libel, as afterwards amended, charged that the flour in question had been treated by a process for the bleaching of flour known as the "Alsop Process," and which process, it was claimed, consists of the generation by means of electricity of nitrogen peroxide gas, mixing this gas with atmospheric air, and bringing the mixture thus formed

into contact with the flour. It was claimed that the flour thus treated had become a subject of interstate commerce by being shipped from the State of Nebraska to the State of Missouri, and that the same was liable to seizure, condemnation and destruction under and by virtue of the provisions of the Act of Congress aforesaid, approved June 30th, 1906, entitled

> "An Act for preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes."

THE PROVISIONS OF THE LAW INVOLVED.

The pertinent provisions of the Act as relates to adulteration are as follows:

> "Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated: * * *
>
> In the case of food:
>
> First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength. * * *
>
> Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.
>
> Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health."

THE LIBEL.

The libel sought the condemnation and destruction of the flour in controversy on two separate and distinct grounds: First, that the flour was adulterated within the meaning of the Food and Drug Act above referred

to; and second, that it was misbranded within the meaning of the same act.

In specifying wherein said flour was adulterated within the meaning of said act, it was charged:

(*a*) That a substance known as nitrites or nitrite reacting material had been mixed and packed with said flour so as to reduce and lower and injuriously affect its quality and strength.

(*b*) That said flour had been mixed, colored and stained in a manner whereby damage and inferiority was concealed.

(*c*) That said flour had been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, nitrogen peroxide, nitrous acid, nitric acid, and other poisonous and deleterious substances which may render said flour injurious to health.

THE ANSWER.

To this amended libel an answer was filed by the Lexington Mill & Elevator Company which tendered issues of law and issues of fact. The issues of law tendered challenged the constitutionality of the law under which the seizure had been made, and challenged the right and authority of the Court and its officers to seize the flour in question.

The issue of fact tendered by the answer, so far as it dealt with the adulteration of the flour, was in part as follows (Rec., p. 16):

> "Further answering said amended libel this defendant admits that said flour has been treated by the Alsop Process, and in this connection alleges that the process by which it has thus been

treated consists of generating in rapid succession a flaming electric discharge in a current of air in proximity to such electric discharge, and in conducting the air as modified by such discharge into the presence of the flour as it is being continuously passed through a revolving reel or agitator, but this defendant denies that the flour thus treated is in any way adulterated or that by said process any poisonous or other deleterious ingredient is in any manner added thereto, or imparted thereto, or that the flour thus treated is in any way injurious to health or contains any added deleterious ingredient or that the same is in any manner adulterated or that by such process any damage or inferiority in said flour is in any manner concealed or that the quality or strength of said flour is in any manner affected, reduced or lowered."

The issue of fact tendered by the answer, so far as it dealt with the misbranding of the flour, need not be recited for the reason that the Court of Appeals ruled there was no evidence to support that charge and the Government has assigned no error here as to that ruling.

On the issues thus joined a very large volume of testimony was taken, and at the close of the testimony instructions were requested on the part of the plaintiff in error, each and all of which were refused, and instructions were given by the Court on its own motion in which the trial court's views of the law applicable to the case were set forth.

Under the Court's instructions a verdict against the defendant on both counts was returned by the jury.

The defendant, Lexington Mill & Elevator Company, then prosecuted error to the Circuit Court of Appeals,

and in that Court it was held there was no competent evidence in the record to sustain the charge of **misbranding**, and that the trial court should have sustained the motion made by the defendant to withdraw that issue from the jury and to direct a verdict in its favor.

The Circuit Court of Appeals also held that the trial court erred in its interpretation of the law relative to the issue of **adulteration**, and remanded the case for a new trial. In presenting the case to this Court, in its application for a writ of *certiorari*, complaint is made by the Government only of the construction placed by the Circuit Court of Appeals upon the law, so far as the same applies to the issue of adulteration of the flour in question.

INTRODUCTION TO ARGUMENT.

(*a*) Description of Alsop Process.

The amended libel filed by the Government (Rec., p. 12) alleges that the flour seized was treated by a process for the bleaching of flour known as the "Alsop Process," and states that said process consists of the generation, by means of electricity of nitrogen peroxide gas, which is mixed with air and the mixture brought into contact with the flour. A somewhat fuller description of this process may be found useful. An electrical machine is provided, having two electrodes or contact points which are alternately brought into and out of contact. As the electrodes are separated about an inch and a half or two inches, what is known in the art as a flaming arc is produced, and at the instant of the production of this arc atmospheric air is caused to circulate by and in proximity to the

same, which results in a modification of the air. As stated in the Alsop Patent No. 759,651 (Rec., p. 1965), in column 1 of said patent, line 30, "It has been determined by chemical analysis, * * * that air treated in the manner * * * described contains nitrogen peroxide (NO^2, or N^2O^4) and traces of ozone (O^3) and is in a state of ionization." In addition it may be stated that such amount of peroxide of nitrogen gas as is produced is enormously diluted with air. According to the testimony of Professor George A. Hulett, one of the Government experts, who tested the gas of an Alsop machine while it was in actual operation (Rec., p. 729), this dilution was in the proportion of 300 parts of nitrogen peroxide to a million parts of air, or in other words, three parts of peroxide of nitrogen in 10,000 parts of air. Professor Hulett estimated that the concentration of the gas that was used in bleaching seized flour was about 1000 parts per million, or in other words, one part of peroxide of nitrogen to 1000 parts of air. Professor Acree, another Government witness (Rec., p. 802), estimated the concentration at 1100 volumes of nitrogen peroxide to one million parts of air, or eleven parts of peroxide of nitrogen to 10,000 parts of air. Pure, that is undiluted, peroxide of nitrogen is dark brown in color, and much heavier than air; so heavy, in fact, that it may be poured from one receptacle into another. The gas from the Alsop machine as it goes to the agitator is invisible. This gaseous medium is carried by a slight air draft to a drum or holder, and thence it passes into an agitator, where it is brought into contact with the flour while it is being agitated and passed through the agitator by a series of revolving paddles. The estimate of

the length of time that the flour is in contact with the modified air varies from twenty seconds to half a minute. The testimony of both sides is in agreement in the statement that the bleaching is effected practically instantaneously. The flour is constantly passing through the agitator, whence, after a brief period of contact with the modified air, it passes through a suitable spout to a bin and thence, in turn, to the packer. The whole process is continuous.

Thus, to recapitulate, the whole Alsop Process consists in passing air through a flaming arc of electricity, whereby a minute amount of peroxide of nitrogen, and perhaps other gases, such as ozone, are formed, and then conducting the air thus modified into the presence of the flour where it acts to instantly lighten its color, and to age and condition the flour.

(*b*) The Effect on the Flour of Treating it by the Alsop Process.

It may be stated that the undisputed testimony shows that the flour is made whiter. The testimony in the case tends to show that when new flour, or flour from new wheat, is thus treated it has imparted to it the characteristics of flour which has been allowed to age and condition for two or three months, such natural aging and conditioning also resulting in whitening the flour, and in drying it out to an appreciable extent. The testimony also shows that when such new flour is treated by the Alsop Process it is rendered at once suitable for baking, being to that extent greatly improved in quality, whereas, as is well known, and as is fully developed by the testimony of both sides, new flour or flour from new wheat is not ordinarily well adapted for baking purposes, but must be allowed to

age and condition for a certain length of time to place it in the best condition for this purpose.

As a further result of this treatment of flour by the Alsop Process, and which really constitues the heart of the present litigation, it is claimed by the Government that a minute amount of a substance designated as "nitrite reacting material" appears in the flour, the flour in controversy showing as claimed by the Government 1.8 parts per million of such nitrite reacting material calculated as nitrogen. It is not definitely known what this alleged substance really is, no one has ever collected it from the flour, and even according to the Government's analysis, it is present in such an exceedingly minute amount that the only way it can be discovered at all is by the use of a sensitive test known as the "Griess-Ilosvay Test", which is a test for nitrous acid, and which is so exceedingly delicate that it is stated it will disclose the presence of nitrous acid if present in the proportion of one part to a billion parts of water (testimony of witness, Mitchell, Rec., p. 255).

It is because of the use of this process and because the flour in question was subjected to the current of electrically modified air for about fifteen seconds that the claim is made that the flour in question was adulterated and that its condemnation and destruction was justified.

(*c*) The Status of the Process.

The Alsop Process was first installed in about the year 1903, and within a few years its use was wellnigh universal. It has been installed in nearly all of the commercial mills of the United States, including the mills of the great milling center at Minneapolis. It is likewise extensively used abroad, especially in

England, Germany and France. In England and France the process has been the subject of litigation. The question of adulteration, that is, as to whether or not it harmed or in any way adulterated the flour, was brought directly in issue in both countries, and in both the absolute legitimacy and harmlessness of the process were vindicated. Patents covering the process were infringed extensively, giving rise to a great deal of the litigation referred to; and in the litigations in this and the other countries named the defendants attacked the patents and the process on every conceivable ground, including that of adulteration or of injury to the flour by the use of the process. As the records of these cases disclose, the services of the most eminent scientists of the world were enlisted on one side or the other. We question if any commercial process has ever been subjected to such widespread and searching investigation as this process of bleaching flour. Not only has the process been vindicated in every instance, but the French Court of Appeals of Douai, in its decision of March 5th, 1908, in the case of **La Compagnie Francaise de Sterilization de Farines v. La Cie. du Procede Alsop and Ch. Poisson**, held that bleaching constitutes a notable industrial progress.

(*d*) The Substance in Controversy.

It is hardly believable, but yet it is true, that this whole controversy, extending over several years and involving a vast outlay of time and money, centers about a substance whose character is not definitely known, and which is present in the flour in such a minute amount that it is absolutely impossible to recover it or to isolate it, and the use of the most delicate test known to science, the Griess-Ilosvay test, is necessary to detect its presence.

BRIEF AND ARGUMENT.

I.

CONGRESS POSSESSES NO POLICE POWER, AND THE ACT OF JUNE 30TH, 1906, IF SUSTAINED AT ALL, MUST BE SUSTAINED ON THE GROUND THAT IT IS A REGULATION OF COMMERCE BETWEEN THE STATES.

(*a*) If the Act of June, 1906, known as the Food and Drugs Act, under which these proceedings were commenced and are being prosecuted, is primarily and in fact an Act **to regulate commerce between the states,** then it may be admitted to be within the powers possessed exclusively by Congress. If, however, the Act is primarily and in fact **the exercise of police powers** as that term has been defined by the Supreme Court of the United States, and if it but incidentally affects commerce between the states, then it is an attempt to exercise powers not possessed by Congress, and is void.

Let us state this proposition in another form, in order to make our position clear. Congress possesses plenary and exclusive power to regulate commerce between the states. The several states possess plenary and exclusive power to enact police regulations for the protection of the public health, public safety, and public morals. If in the exercise of its powers to regulate commerce between the states an Act is passed by Congress which has for its primary object the regulation of commerce between the states, that Act cannot be held void simply because in its operation it does incidentally or necessarily promote public health, public safety, and public morals.

On the other hand, an Act passed by the Legislature of a state which has for its primary object the protection of the public health, public safety, or morals of the citizens of the State, cannot be held void merely because in its operation it may incidentally affect interstate commerce. But if the state were to pass an Act, the only purpose of which would be to regulate commerce between the states, or if Congress should pass an Act, the only effect and purpose of which is to protect public health, then we submit the state in the one instance and Congress in the other has exceeded its powers.

That was the rule announced by this Court in the case of **Crutcher v. Kentucky**, 141 U. S. 47, where Mr. Justice Bradley, speaking for the Court, said:

> "It is also within the undoubted province of the State Legislature to make regulations with regard to speed of railroad trains in the neighborhood of cities and towns with regard to precautions to be taken in the approach of said trains to bridges, tunnels, deep cuts, and sharp curves, and generally with regard to all operations in which the lives and health of people may be endangered, even though said regulations affect to some extent the operation of interstate commerce."

These regulations by the several states are purely police regulations in their character, and while they incidentally affect interstate commerce, have universally been sustained because the primary object of the act is the preservation of the public health and public safety.

It will be conceded that if the primary object and the main purpose to be accomplished by the act was the regulation of interstate commerce, then the act of

the state would be void, although it did incidentally promote public safety and public health.

The counter proposition must be equally true that if the Act of Congress has for its primary object the regulation of commerce between the states, then it is not void merely because incidentally it does promote public health and public safety. But if the object in view and the main purpose to be served is the protection of public health and public safety, then we insist the act is beyond the powers of Congress, even though incidentally commerce between the states is drawn in question.

The term "police power", like the term "due process of law", is difficult of concise definition, and we cannot do better than to use the language of Mr. Justice Brown, in the case of **Lawton v. Steele**, 152 U. S. 133 (14 S. C. R. 499), where he said:

> "The extent and limits of what is known as police power have been a fruitful subject of discussion in the Appellate Courts of nearly every state in the Union. It is uniformly conceded to include everything essential to public safety, health, and morals, and to justify the destruction or abatement by summary proceedings of whatever may be regarded as a public nuisance."

Accepting this as a correct definition of the term "police power", we believe the decisions of this Court from the time of Chief Justice Marshall down to the present time justify us in claiming that Congress possesses no police power within the states, and that if the act in question is an attempted exercise of that power on the part of Congress, then it is unconstitutional and void.

In the License Cases (5 How. 504) decided in 1847, in the opinion by Mr. Justice Catron it was said:

> "And here is the limit between the sovereign power of the state and the federal power. That is to say, that which does not belong to commerce is within the jurisdiction of the police power of the state, and that which does belong to commerce is within the jurisdiction of the United States. And to this must all the general views come, as I suppose, that were suggested in the reasoning of this Court in the case of **Gibbon v. Ogden**, 22 U. S. 1."

This clearly marks out the line of distinction. If it pertains to commerce between the states, it must be regulated by Congress. If it does not belong to commerce, but is an exercise of police power, then it belongs to the states.

This rule was further announced in the case of **Hannibal & St. Joe R. R. Co. v. Hewson**, 95 U. S. 465, where Mr. Justice Strong said:

> "We admit that the deposit in Congress of the power to regulate foreign commerce and commerce among the states was not a surrender of that which may properly be denominated police power. What that power is it is difficult to determine with sharp precision. It is generally said to extend to making regulations promotive of domestic order, morals, health and safety."

Under the Constitution of the United States, powers not delegated to Congress are reserved to the states or to the people thereof, and if it be true, as stated in this opinion, that the deposit in Congress of the power to regulate commerce among the states was not a surrender of the police powers of the several states, then it

must be clear that if the act in question is in truth and in fact an exercise of police power, then such power could be exercised not by Congress, but only by the several states.

As applied to the case at bar, the State of Missouri would have the right in the exercise of the police powers which it possesses to say what should or should not be sold as food products, provided always that regulation is reasonable and not arbitrary. But the Congress of the United States would not have the power to make this same regulation, if we are correct in our contention that it is the exercise of a police power.

In the License Cases above referred to, it was further said:

> "The police power, which is exclusively in the states, is alone competent to the correction of these great evils, and all measures of restraint or prohibition necessary to effect the purposes are within the scope of that authority."

In **Wilkinson v. Rahrer**, 140 U. S. 545 (11 S. C. R. 865), the exclusive right and power of Congress to regulate commerce between the states and the exclusive right and power of the states to enact proper police regulations were very clearly pointed out in the opinion by Chief Justice Fuller. In the course of that opinion he said:

> "It is absurd to affirm that because the rights of life, liberty and property (which include all civil rights that men have) are by the amendment sought to be protected against invasion on the part of the state without due process of law, Congress may, therefore, provide due process of law for their vindication in every case; and that because the denial by a state to any person of the equal protection of the laws is prohibited by the

amendment, therefore Congress may adopt laws for their equal protection. In short, it is not to be doubted that the power to make the ordinary regulations of police remains with the individual states and cannot be assumed by the national government, and that in this respect it is not interfered with by the 14th amendment."

Note the language:

"It is not to be doubted that the power to make the ordinary regulations of police remains with the individual states and cannot be assumed by the national government, and that in this respect it is not interfered with by the 14th amendment."

This rule was applied and followed by this court in the cases of

Mugler v. *Kansas*, 123 U. S. 623;
Plumley v. *Commonwealth of Massachusetts*, 155 U. S. 461;
New Orleans Gas Light Co. v. *Louisiana Light & Heat Producing Co.*, 115 U. S. 650;
United States v. *Knight*, 156 U. S. 1;
Interstate Commerce Commission v. *Brimson*, 154 U. S. 447;
Employers Liability Case, 207 U. S. 463.

In the case of the United States v. Knight, 156 U. S. 1, *supra*, Chief Justice Fuller, speaking for the Court, said:

"*It cannot be denied that the power of a state to protect the lives, health and property of its citizens and to preserve good order and the public morals, the power to govern men and things within the limits of its dominion, is a power originally and always belonging to the states, not surrendered by them to the general government, nor directly restrained by the Constitution of the United States, and essentially exclusive.*" (Italics ours.)

II.

THE ACT OF JUNE 30, 1906, IS TO BE REGARDED AS AN ACT TO REGULATE COMMERCE, AND THE COURT ERRED IN CHARGING THE JURY THAT THE GOVERNMENT NEED NOT PROVE THAT THE FLOUR IN QUESTION, OR FOODSTUFFS MADE BY THE USE OF IT, WOULD INJURE THE HEALTH OF THE CONSUMER; THAT IT IS THE CHARACTER—NOT THE QUANTITY—OF THE ADDED SUBSTANCE WHICH IS TO DETERMINE THIS CASE.

The section of the Act involved under this branch of the case is as follows:

> "Sec. 7. That for the purposes of this Act an article shall be deemed to be adulterated:
>
> * * * * * * *
>
> In the case of food:
>
> * * * * * * *
>
> Fifth: If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health."

The amended libel under which this flour was condemned contains the following:

> "By the treatment as aforesaid the said flour has been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, nitrogen peroxide, nitrous acid, nitric acid, and other poisonous and deleterious substances which may render said flour injurious to health" (Rec., p. 14).

The answer of the respondent denied this statement of the libel (Rec., p. 17, Par. 10).

The instructions requested by the respondent as to this branch of the case, and which were refused, are as follows (p. 2007):

"4. That there is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question contains an added poisonous or other added deleterious ingredient which may render it injurious to health.

"11. That the burden is upon the prosecution to prove the truth of the charge in the libel, that by the treatment of the flour in question by the said Alsop Process it has been caused to contain added poisonous or other added deleterious ingredients, to-wit, nitrites or nitrite reacting material, which may render said flour injurious to health.

"And in this connection you are further instructed that it is incumbent upon the Government to prove that any such added poisonous or other added deleterious ingredients, if any, contained in said flour are of such a character and contained in the flour seized in such quantities, conditions and amounts as may render said flour injurious to health, and unless you find that all of such facts are so proven, you cannot find against the claimant or condemn the flour in question under the charge in the libel, and if you fail to so find your verdict upon that count or charge in the libel must be in favor of the claimant or defendant.

"16. The law does not prohibit the adding of nitrites or nitrite reacting material to flour, and a jury cannot find for the Government or against the claimant, even if it be shown that nitrites or nitrite reacting material was added to the flour in question, unless they believe from a preponderance of the evidence that such addition, if any, rendered said flour injurious to the health of those who

might consume the bread or other foods made from said flour."

In submitting this question to the jury the Court instructed the jury as follows (Rec., p. 2023):

> "It is clear that it was intended by Congress to prohibit the adding to the food of any quantity of the prohibited substance. The fact that poisonous substances are to be found in the body of human beings, in the air, in potable water, and in articles of food, such as ham, bacon, fruits, certain vegetables, and other articles, does not justify the adding of the same or other poisonous substances to articles of food such as flour, because the statute condemns the adding of poisonous substances. Therefore, the Court charges you that the Government need not prove that this flour or foodstuffs made by the use of it would injure the health of any consumer. It is the character—not the quantity—of the added substance, if any, which is to determine this case."

This instruction, given by the Court, is erroneous for the following reasons:

(*a*) **Congress never intended the statute in question should be construed as the trial court construed it in this instruction to the jury.**

The prime purpose of the Act is to protect the health and lives of the people by preventing interstate traffic in foodstuffs which, if consumed, would result in injury to health; and at the same time affecting as little as possible the business interests of the country—which consist largely in the production and transportation of the subjects of the act. Harmless foodstuffs are not under the ban of the law. They could not be.

Congress nor any other legislative body has any power to confiscate, condemn and destroy the useful and harmless property of a citizen. This was the idea that the framers of the Act had. The reports of the committees of Congress upon this Act, and especially upon the section (7) of the Act now under consideration, developed the express purpose of denouncing only those things which, if taken within the system, would be absolutely injurious to health. The meaning of this very section was discussed in the committee (Committee Report, February 24, 1904, p. 108; Senate Report, Vol. 4, 58th Congress).

> Mr. Queeny, referring to this section, says: "It reads: 'If it contain any added poisonous ingredient or any ingredient which may render such article injurious to the health of the person consuming it.'"
>
> The Chairman: That is the fourth paragraph of the fifth (original) section. What is there in regard to that that you wish to suggest?
>
> Mr. Queeny: I understand that this bill is not for the purpose of legislating against any product that is not known to be poisonous.
>
> The Chairman: No, but it provides a means of determining whether or not it is poisonous.
>
> Mr. Queeny: Known to be poisonous in the quantity in which it is used. * * *
>
> The Chairman: Or injurious to health?
>
> Mr. Queeny: That is right, in the quantity in which it is used.
>
> The Chairman: If that can be determined, then the article comes within the ban of the law.
>
> Mr. Queeny: That is what I want to have understood. I believe the same thing could be accomplished by having that section read: 'If it contain any ingredient which may render such article injurious to health of the person consuming it.'

The Chairman: That paragraph refers back to the former provisions of the same section, so that we do not want to make a separate paragraph of it.

Mr. Queeny: No. My suggestion, if you will allow me, would be to eliminate those words, 'any added poisonous ingredients,' and have it read: 'If it contain any ingredient which may render such article injurious to health of the person consuming it. An article may be poisonous when added to a food if it is added in excess quantities. I speak of bicarbonate of soda—common article of trade—cream of tartar and alum; but they are not poisonous in the quantities in which they are used. There are cases on record of poisoning——

Senator McCumber (interrupting): The bill gives much more liberty to the manufacturer now than it would under your definition.

Senator Latimer: This says if it shall render it injurious. If you put in an amount which does not render it injurious I do not see how the proposed law will reach you.

Mr. Queeny: But it is a poisonous ingredient if taken in large quantities.

Senator Latimer: But it has to be put in in quantities large enough to become injurious.

The Chairman: The limitation is "which may render such article injurious to the health of the person consuming it."

Mr. Queeny: Here is the provision as it reads now. It is distinct from the other. It reads: "If it contain any added poisonous ingredient—comma—or any ingredient which may render such article injurious to the health of the person consuming it."

The Chairman: There is no comma there. It is all one sentence. The words 'which may render such article injurious' are limitations on the first line.

Senator Latimer: That is right.

Mr. Queeny: You would not consider it a separate paragraph in the bill?

The Chairman: It is not so written in the bill.

Mr. Queeny: That is the point I wish to bring out. An ingredient may be added to a food product which (is) in the proper proportions is not poisonous.

The Chairman: This does not prohibit that. It only says where it may render it injurious to the person consuming it. That is a limitation.

Mr. Heyburn (chairman), who had charge of the bill, replying to a query of Mr. Spooner regarding this same section, said:

"Mr. Heyburn: As to the use of the term 'poisonous', let me state that everything which contains poison is not poisonous. It depends on the quantity and the combination. A very large majority of the things consumed by the human family contain, under analysis, some kind of poison, but it depends upon the combination, the chemical relation which it bears to the body in which it exists **as to whether or not it is dangerous to take into the human system.**

Mr. Spooner: This bill provides for a detrimental and diabolical combination: 'If it contain any added poisonous or other ingredients which may render such article injurious to human health.'

Mr. Heyburn: * * * In other words, after providing carefully against poisons, recognizing the fact that poisons exist independent of any human action in certain commodities, we have provided that (an article which contains) added poisonous or other ingredient **which may render such article injurious to human health** shall be deemed to be adulterated. That is under the definition of

adulterated articles." (Con. Rec., Vol. 40, Part 2, Jan. 16, 1906, p. 1131.)

This construction of the language of the section of the statute under consideration runs through the whole of the long debates had in both houses of Congress during the pendency of the bill, and there is no question whatever but that in the passage of this Act Congress intended the words of this section to be used as above indicated, in their usual and ordinary sense. In other words, it was never intended by Congress that this act should ever be construed to mean that the useful and harmless property of a citizen should, by the methods providing for the prevention of the sale of harmful and injurious foods, be confiscated, condemned and destroyed. This would be contrary to the policy and spirit of our laws and the fundamental principles of our government. These reports and discussions are properly considered by the Court in determining the intention of the Legislature.

Church of Holy Trinity v. United States, 143 U. S. 457, 36 L. Ed. 229, 12 S. Ct. 513.

U. S. v. C. & N. W. Ry. Co., 157 Fed. Rep., *l. c.* 618.

Binns v. U. S., 194 U. S., *l. c.* 495 (48 L. Ed., *l. c.* 1090).

Blake v. Natl. City Bank, 23 Wall. 307 (23 L. Ed. 119).

Wadsworth v. Boysen, 148 Fed. 771.

(*b*) **The language used in the Act in question is not susceptible of the interpretation placed thereon by the trial court.**

There is no ambiguity as to the language of the statute. It plainly says, "that for the purpose of this Act any article (in this case, the flour in question) shall be

deemed to be adulterated if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health." Applying the well-known rule of construction that, in determining the meaning of an act, full force and effect must be given, if possible, to every clause and word, we encounter no difficulty in arriving at the conclusion that the statute in question means that an article is adulterated only when the added ingredient, whether poisonous or deleterious, is one "which may render such article (that is the flour) injurious to health".

As said by Mr. Justice Harlan, speaking for the Court in **Montclam v. Ramsdell,** 107 U. S. 147:

> "It is the duty of the Court to give effect, if possible, to every clause and word of a statute, avoiding, if it may be, any construction which implies that the Legislature was ignorant of the meaning of the language it employed."

And as said by Chief Justice Marshall in the case of **Postmaster General v. Early et al.,** 6 L. C. P. 147, 12 Wheat. 136:

> "The language of the Act is that the District Court shall have cognizance concurrent with the courts and magistrates of the several states, and the Circuit Court of the United States of all suits, etc. What is the meaning and purport of the words 'concurrent with' the Circuit Court of the United States? Are they entirely senseless? Are they to be excluded from the clause in which the Legislature has inserted them, or are they to be taken into view and allowed the effect of which they are capable?
>
> "The words are certainly not senseless. They have a plain and obvious meaning. And it is, we think, a rule that words which have a meaning

are not to be entirely disregarded in construing a statute. We cannot understand this clause as if these words were excluded from it."

Assuming for the moment that nitrites or nitrite reacting material was, by the Alsop Process, added to the flour, as alleged in the libel, and that in its character it was poisonous or deleterious, this, under the plain language of the statute, would not be sufficient to condemn or confiscate and destroy it unless it were further shown that such ingredient was added to the flour in sufficient quantities to render it injurious to health. As was so often said in the discussion of this Act while under the consideration of Congress, the latter words, "which may render such article injurious to health," constitute a limitation upon the previous language of the Act, and, in order to bring an *article of food* within its condemnation, **it must be shown that its consumption would injure the health of the consumer.**

The attempt of the Court, in its charge, to draw upon these words of limitation as an argument to support the position taken by the Court is, to say the least, far fetched and without the slightest support in the ordinary rules of construction of the English language. The Court says: "The word 'poisonous' as an adjective conveys a descriptive meaning, and is used in a qualitative sense, and not a quantitative sense. That is, it refers to the kind of substances, and not to the quantity of the substance."

While it is true that "poisonous" qualifies ingredient, it is equally true that the clause, "which may render such article injurious to health," also qualifies "ingredient". But the Court says not. He says: "This idea or meaning is further emphasized and ren-

dered more certain by the qualifying clause 'which **may** render such article injurious to health'. It does not say 'which **does** render such article injurious to health'." Suppose it does not. Is the limiting clause to be entirely stricken out? The point is, no matter which word you use, **the trial court absolutely ignored the words of limitation in his construction of the statute.**

The statute treats of foodstuffs **to be consumed,** for the purpose of protecting the people against foodstuffs that, **when consumed,** may be injurious to health. It denounces those foodstuffs which contain any added poisonous or other added deleterious ingredient which may render such foodstuffs injurious to health, and none other.

Giving to all the words of the statute, therefore, their plain, usual and ordinary meaning, it is plain that the trial court erroneously construed it.

CASES IN POINT.

In line with the above argument and contention as to the proper construction of the subdivision of the Act under consideration, we have been able to find only one case in this country which deals directly with this construction. It is the case of **French Silver Dragee Co. v. United States,** 179 Fed. Rep. 824, wherein it is said:

> "The interpretation given to the statute by the trial court was that the words 'or other mineral substance', following the phrase 'in the case of confectionery: If it contain terra alba, barytes, talc, chrome yellow'—broadly included every mineral substance, including silver. The defendant, on the other hand, contends that the different

clauses of the sub-section in question should be construed together, and that, so construed, they embrace only those substances which are deceptive or detrimental to health.

"Interpreting the provision as embracing in the phrase 'or other mineral substances' all mineral substances whatsoever, it is apparent that the use of the mineral substances, salt, sulphur and baking soda, in the manufacture of confectionery—and it appears that they are so used—would render the product adulterated within the meaning of the statute, and its sale unlawful. Similarly, the use of silver to coat these dragees would violate the act. But the product in which the salt, sulphur, baking soda or silver was used would not be unhealthful, nor would there be any element of deceit present. The provision so construed would arbitrarily prohibit the use of all mineral substances in confectionery, would accomplish thereby none of the purposes of the act, *and would apply a different standard in the case of confectionery than in the case of food or drugs.* Unless the language of the statute imperatively requires such construction, it should not be adopted by the courts. • • •

"Stated in another way, we think that the history of the Act, the objects to be accomplished by it, and the language of all its provisions require that it should be so interpreted that in the case of confectionery, as in the cases of food and drugs, the Government should establish, with respect to products not specifically named, that they either deceive, or are calculated to deceive, the public, or are detrimental to health; and, as no proof was offered in this case tending to show that the confectionery in question was either deceptive or injurious, the defendant was improperly convicted"

It will be noticed that the learned judge, in interpreting the construction of the subdivision relating to confectionery, refers to the subdivision which we are discussing relating to foods as necessarily requiring that the added substance shall be sufficient to render the article of food injurious to health, and applies the same construction to the subdivision relating to confectionery, on the broad ground that the object of the statute, as shown by the provision relating to foods, is to protect the health of the people by denying interstate transportation to such articles of food only that would be injurious to health when consumed. In other words, he finds no difficulty whatever in construing the subdivision relating to foods just as we contend that it should be construed, and just as it reads.

On the point of the construction of Subdivision 5th, Article 7, of the Act given by the Court below, we cite the following foreign authorities:

Friend v. Mapp, 68 J. P. 589;
Hull v. Horsnell, 68 J. P. 591.

The English court had under consideration a statute very similar to ours, Section 3 of which is as follows:

> "No person shall mix, color, stain or powder, or order or permit any other person to mix, color, stain or powder, any article of food with any ingredient or material so as to render the article injurious to health." (38 and 39 Vict., Ch. 63, Sec. 3.)

In the case of **Friend v. Mapp**, the respondent is summoned for selling preserved peas, the color of which had been retained by the addition of **sulphate** of **copper.**

The Government charged in the libel or information

that sulphate of copper was a poisonous substance and injurious to health; that the copper was used to preserve the color of the peas; but it was admitted by the Government that they had never known any one to be injured by eating peas containing copper.

The defense contended that the information disclosed no offense under the Act, but it did not allege that the mixture of the ingredient rendered the article of food, namely, the peas, injurious to health, but merely that the ingredient was injurious.

The prosecution contended that that was sufficient, and that it was not necessary to show that the ingredient rendered the article of peas injurious to health.

The lower court held that sulphate of copper is injurious to health, and that that ingredient necessarily rendered the whole article so injurious to health.

Lord Alverstone, C. J., reversing the case on appeal, said:

> "I have no doubt that in order to convict under Section 3 (the one heretofore quoted) the **article of food** must be shown to be injurious to health by the **addition** of some ingredient."

The other case **(Hull v. Horsnell)** was of a similar character to the first one. The peas in this case, however, were shown to contain 2.55 grains of copper per pound as having been added to the peas.

The Government showed that copper is not a normal constituent of the peas or of the human body, and that a medical dose of sulphate of copper is from one-half to two grains, and acts as an astringent, and that in large doses sulphate of copper acts as an irritant, and is apt to produce vomiting, and is a cumulative poison:

That occasional quantities would not harm a healthy

individual, but that habitual consumption thereof might be injurious to health;

That the copper was added to preserve the peas and to give them a fresh, bright green color.

The Government admitted that such peas had been generally used for some years, and that they knew of no recorded case of injury arising from their consumption.

The Government contended in that case:

(1) That sulphate of copper was **foreign** to said preserved peas;

(2) That the addition of copper in the proportions named was injurious to health.

The **defense** was that the purchaser asked for preserved peas, and was supplied with what is usually known as preserved peas.

The lower court found generally that in preserved peas copper was used, and that the **quantity** of copper present in this instance was not sufficient to render the **peas** injurious;

That they asked for preserved peas, and were supplied with peas **usually** known and sold as preserved peas, and not containing any **foreign** ingredient **other** than that which is **usually** found in preserved peas, and in no greater **quantity.**

Lord Alverstone, C. J., on appeal, sustained the lower court and held the defense good.

The foregoing English cases are also cited upon the proposition that while the substance in the flour (or peas) may be qualitatively poisonous, they do not thereby render the food product injurious to health.

(*c*) **The Act as construed by the trial court is arbitrary and an unreasonable interference with the rights of property.**

While a large discretion is vested in the legislative branch of the Government in determining what laws shall be enacted for the regulation of interstate commerce its power in that regard is not unlimited. It cannot act arbitrarily. And whether or not the restrictions and prohibitions are reasonable or arbitrary must be subject to final review by the courts.

The delimitation of the legislative power in this regard is well stated in the case of **Jew Ho v. Williamson**, 103 Fed. 10. In that case the rule was laid down by Morrow, Circuit Judge, as follows:

> "A large discretion is necessarily vested in the state or municipal authorities in determining what is a proper exercise of the police power of the state for the protection of the public health, and what measures are necessary to meet particular conditions or emergencies; but their determination is not final, and is subject to supervision by the courts. They cannot, under the guise of protecting the public, arbitrarily interfere with private business or impose unusual or unnecessary restrictions upon lawful occupations, and whether they have done so in a particular case is a judicial question."

This court has in a number of cases reviewed the action of the Legislature of different states and declared illegal acts passed by the different states, on the ground that it was an arbitrary exercise of power, and did not in truth and in fact tend to promote health.

While we do not urge that the Act of June, 1906, under which this prosecution was brought, shows on its face an arbitrary exercise of power (even if it is conceded that Congress has the power to enact such legislation), yet we do insist that the interpretation of the law as made by the trial court is an arbitrary exer-

cise of power, without any reference to whether or not the flour seized was or was not adulterated and whether or not the flour in question would be injurious to health.

The act under which this proceeding was brought forbids the adding to an article of food of any poisonous or other deleterious ingredient **"which may render it injurious to health."** It will thus be seen that Congress did not intend to condemn nor to prohibit the sale of an article except such as in the language of the Act "may be injurious to health". Indeed, it must be plain to any one that Congress would not have the authority or the power to arbitrarily exclude from the markets an article which was intended for consumption as food, and which was not in any way injurious to health.

Flour is a recognized subject of commerce. Civilized man recognizes it as a food product. It is hardly conceivable that Congress intended to exclude from the markets any flour made by whatever process, unless the same had been rendered injurious to health. To exclude it from the market when not injurious to health would be unwarranted and wholly beyond the powers of any legislative authority.

The instruction requested by the respondent contained this language:

> "In this connection you are instructed that it is incumbent upon the Government to prove that any such added poisonous or other added deleterious ingredients, if any, contained in said flour are of such a character and contained in the flour in such quantities, conditions and amounts as may render said flour injurious to health" (Rec., p. 2009).

This the trial court refused to give, but said to the jury:

> "The Court charges you that the Government need not prove that this flour or foodstuffs made by the use of it would injure the health of any consumer. It is the character, not the quantity, of the added substance, if any, which is to determine this case" (Rec., p. 2023).

The respondent showed by the testimony of Prof. John Wesener, a graduate of the College of Physicians and Surgeons in Chicago; one who had held the chair of chemistry in the University of Illinois for twelve years; president of the Columbus Laboratories in the City of Chicago, and who for many years made a study of bleached and unbleached flours, and was as well qualified to testify as to the effect upon flour of the process in question as any man in the United States (Rec., p. 1040);

By Prof. Lucius E. Sayre, a graduate of the Philadelphia College of Pharmacy, a dean of the School of Pharmacy of the University of Kansas; a member of the American Chemical Society and of the American Pharmaceutical Association; a member of the Committee of Revision of the United States Pharmacopeia, and one who has made a great study of the effect of bleaching upon flour (Rec., p. 1274);

By Dr. Albert W. Rockwood, Professor of Chemistry and Toxicology in the University of Iowa, and who for many years has been head of the Department of Chemistry in that university (Rec., p. 1599);

By Prof. Willard, Professor of Chemistry in the Kansas State Agricultural College, and who for four years prior to the trial of this case had been making

a study of the bleaching of flour and the effect thereof (Rec., p. 1640);

By Dr. Ralph W. Webster, a graduate of the University of Chicago and of the Rush Medical College in Chicago, and who for a number of years has been specializing in physiological chemistry and toxicology, and who had made a study of the effect of bleaching upon flours (Rec., p. 1796);

By Dr. Walter M. Cross, a graduate of the University of Kansas, and of its Medical College, and who for ten years has conducted a commercial laboratory in the City of Kansas City, and for six years has been chemist to the municipality of the corporation of Kansas City (Rec., p. 1538);

By Prof. Walter S. Haines, the Professor of Chemistry and Toxicology in the Rush Medical College; a lecturer on toxicology in the University of Chicago, a member of the Committee on Revision of the United States Pharmacopeia; who has made a special study of flours treated by the Alsop process, and who stands in his profession the peer of any in the whole United States (Rec., p. 1841);

By each and all of these witnesses, as well as others qualified to testify as to the effect of this treatment, it showed that the flour in question did not contain any added poisonous or any added deleterious ingredient that could in any manner render it injurious to health.

The evidence of Dr. Haines on this subject fairly reflects the testimony of the other witnesses last above referred to, and the testimony of Dr. Haines, touching this matter was as follows:

> "Q. Assuming that the flour in this case was bleached by the Alsop process, and as a result of

that bleaching the flour contained 1.8 parts per million of nitrite reacting material and that bread made from such flour contained all the nitrite reacting material that was in the flour, what is your opinion as to the possibility of harm from the constant daily eating of such bread?

"A. I do not think it could produce the slightest harm.

"Q. Now, under the assumption of my last question, what would you say as to the possibility of such bread, in reference to those nitrites producing any effect whatsoever upon the system?

"A. I do not think it would have the slightest effect of any kind on the system" (Rec., p. 1841).

In this conclusion these witnesses are sustained by the opinion of the High Court of Justice, Chancery Division, of England, in the case decided in 1909, entitled "Flour Oxidizing Company, Limited, v. J. & R. Hutchinson, Vol. 26, Reports of Patents, Design and Trade-Mark Cases, No. 21, pages 597-638". The Court in that case had under consideration the effect upon flour treated in identically the same manner as in the case at bar. In reviewing the entire case, Warrington, Judge, speaking for the court, said:

"It seems to me, therefore, that, whether you regard it from the point of view of digestion, whether you regard it from the point of view of nutrition, or whether you regard it from the point of view of positive harm, I must come to the conclusion that the plaintiffs have established the truth of the statement in Andrews' specification that no deleterious action on the flour in question is caused by the above-mentioned treatment."

The Referee Board of Consulting Scientific Experts

in the United States Department of Agriculture is in full accord with the witnesses for the respondent, that toxicity is dependent on quantity; and that substances qualitatively poisonous may be perfectly innocuous in minute, or even small, amounts. These eminent scientists directly oppose the theory of the Government in this case that a substance known to be harmful in large amounts is proportionately harmful in the minutest conceivable amount. This is shown in the following report of the Referee Board, which we reproduce in full:

UNITED STATES DEPARTMENT OF AGRICULTURE.

Office of Consulting Scientific Experts.

January 13th, 1912.

To the Secretary of Agriculture,
Washington, D. C.

SIR:

In reply to your request under date of December 30, 1911, that the Referee Board discuss Food Inspection Decision 135 and give a definite statement showing the opinion of the Referee Board as to whether the decision in question is in harmony with the conclusions presented by the Board in its Report on the Influence of Saccharin on the Nutrition and Health of Man, the Referee Board respectfully submits the following statements:

1. The findings of the Referee Board, based upon what would seem to be convincing, experimental evidence, are that small quantities of saccharin, up to 0.3 gram per day, are without deleterious or poisonous action and are not injurious to health. This being so, it would seemingly follow that foods to which small quantities of saccharin have been added—in amounts insufficient

to result in a daily intake of more than 0.3 gram—cannot be considered as adulterated, since foods so treated do not contain any added deleterious ingredient which may render the said food injurious to health.

Admitting that large quantities of saccharin—over 0.3 gram per day—taken for long periods of time may impair digestion, such evidence cannot consistently be accepted as an argument in favor of the view that smaller quantities must constitute a menace to health. It is often claimed that any substance having a deleterious effect on health when taken in large amount, must necessarily be injurious even when consumed in very small quantities, and that it is dangerous to differentiate on the basis of quantity. There is, however, no justification for such a view from a physiological standpoint. Common custom, for example, sanctions the free use of vinegar or dilute acetic acid as a preservative; yet it is well known that in larger quantity acetic acid is a dangerous substance. Common salt, while harmless when taken in small quantities, may become a serious menace to health if taken in larger quantities. The hydrochloric acid of the gastric juice is not only harmless but is essential for the welfare of the body, yet when its concentration is increased beyond a certain point it becomes a poison. It is evident, therefore, that the decision as to whether a certain substance is or is not injurious to health must take into account the quantity of the substance that is involved. The Referee Board is compelled, on the basis of the experimental evidence, to hold to the view that the addition of *small* quantities of saccharin to food does not constitute an adulteration, since there is no evidence that small quantities of the substance are deleterious to the health of normal adults.

2. The *addition* of saccharin to foods, in large

or small quantities, does not, so far as the findings of the Referee Board show, effect in any way the quality or strength of the food. This statement is not in any sense contradictory to, or lacking in harmony with, the statement that the addition of saccharin to a food as a substitute for cane sugar is a substitution involving a reduction in the food value of the sweetened product and may thus result in a reduction in its quality. The simple addition of saccharin to a food cannot, in the opinion of the Referee Board, be considered as an adulteration through any reduction in the strength or quality of the food, since no such effect follows its addition to the food. On the other hand, the *substitution* of saccharin for cane sugar, for example, in any food product may result in a decided lowering of food value, and this must certainly be considered as an adulteration.

In the opinion of the Referee Board the use of saccharin in food in quantities that might constitute a menace to health is improbable, since its extreme sweetness would naturally limit its consumption by the individual to amounts below what might prove injurious (in harmony with the conclusions expressed in the original report of the board). On the other hand, the possibility of substituting saccharin for sugar, thereby lowering the food value of the sweetened products, is a serious menace, and one that should be carefully safeguarded.

Yours very respectfully,

(Signed) Ira Remsen, *Chairman*,
(Signed) Russell H. Chittenden,
(Signed) John H. Long,
(Signed) Alonzo E. Taylor,
*Referee Board of Consulting Scientific Experts.**

*The absence of Dr. Theobald Smith in Europe accounts for the fact that his signature is here lacking.

If the testimony above referred to is to be believed and the flour in controversy did not contain anything which might render it injurious to health, and if by its treatment with the Alsop process no added poisonous or added deleterious ingredients which might render it injurious to health were imparted to it, then, we submit, it is wholly without the power of Congress or any other branch of the Government to exclude it from the channels of commerce or to prohibit its sale.

The fact is, Congress has not undertaken to exclude flour such as this from the markets. Congress did not attempt to exclude from the markets any flour except such as "may be injurious to health." The trial court, however, by its instructions forced the condemnation and destruction of this flour, even though it contained nothing which would in any wise render it injurious to health.

This is not the exercise of a legislative power, but is an arbitrary and illegal taking of property without due process of law and a denial to the respondent of the right of contract, the right to sell in the markets of the country a product harmless in itself and which has been recognized as a food product since the days of civilization.

This Court has in many cases condemned such arbitrary action on the part of legislative bodies, and we submit should equally condemn such arbitrary action on the part of trial courts.

In the case of **Powell v. Pennsylvania**, 127 U. S. 678, an Act passed by the State of Pennsylvania in the exercise of its police power was under consideration, and this Court said:

> "The answer made to all this reasoning and this decision is that the Act of Pennsylvania was passed in the exercise of its police power, meaning by that term its power to provide for the health of the people of the state. Undoubtedly this power of the state extends to all regulations affecting not only the health but the good order, morals, and safety of society. But a law does not necessarily fall under the class of police regulations because it is passed under the pretense of such regulation as in this case by a false title purporting to protect the health and prevent the adulteration of dairy products and of fraud in the sale thereof. It must have in its provision some relation to the end to be accomplished. **If that which is forbidden is not injurious to the health or morals of the people, if it does not disturb their peace or menace their safety, it derives no validity by calling it a police or health law.**" (Bold-face type ours.)

That language is very appropriate to the case at bar, and the instructions given and refused by the trial court should be measured thereby.

If the testimony of the witnesses presented by the respondent can be believed, then the flour in question was in no manner injurious to the health of any person.

The further language of the Court in that case is well to be remembered when it said:

> "Whatever name it may receive, it is nothing less than an unwarranted interference with the rights and liberties of the citizens." • • • Under the mere guise of police regulation, personal rights and private property cannot be arbitrarily invaded, and the determination of the

Legislature is not final and conclusive. If it passes an act ostensibly for the public health, and thereby destroys or takes away the property of a citizen and interferes with his personal liberty, then it is for the courts to scrutinize the act and see whether it really relates to and is convenient and appropriate to promote the public health. It matters not that the Legislature may in the title of the act or in its body declare that it is intended for the improvement of the public health. Such a declaration does not conclude the courts and they must yet determine the fact declared and enforce the supreme law."

The same rule was announced by this Court in the cases of

Muggler v. Kansas, 123 U. S. 623;
Schollenberger v. Pennsylvania, 171 U. S. 1 (18 S. C. R. 757);
Collins v. New Hampshire, 171 U. S. 30 (18 S. C. R. 768);
Lochner v. New York, 198 U. S. 45 (25 S. C. R. 538.)

The amount of nitrites which the flour in question contained was shown by the Government's experts to be not to exceed 1.8 parts per million (Winton, Rec., p 150), and the testimony of the witnesses on behalf of the respondent who had given years of study to this question, who had approached it from every conceivable standpoint, who had made every experiment and investigation known to chemical science, all agree that the flour in question—if it be admitted that it contained 1.8 parts per million of nitrites—was absolutely harmless; that the amount it was thus made to contain

was a negligible quantity, wholly incapable of having any effect whatever upon the human system, and wholly incapable of producing any harmful results whatever.

The decision of the Supreme Court of the United States in the Schollenberger case clearly shows that it would not be within the power of any legislative body possessing police powers to exclude from the markets this article if it was entirely harmless and a healthful food product.

As was said by the Court:

> "A law which does thus prohibit the introduction of an article like oleomargarine" (like the flour in question) "is not a law which regulates or restricts the sale of articles deemed injurious to the health of the community, but is one which prevents the introduction of a perfectly healthful commodity merely for the purpose of in that way more easily preventing an adulterated and possibly injurious article from being introduced."

That same rule was followed by the Supreme Court of the United States in the case of **Collins v. New Hampshire**, 171 U. S. 30 (18 S. C. R. 768), where it was held:

> "In whatever language a statute may be framed, its purpose must be determined by its natural and reasonable effect, and such purpose is to be taken into consideration in passing on its validity."

We repeat that Congress did not intend by this act to prohibit the sale of an article that was harmless and

which was a valuable food product. If the flour in question be as harmless as was testified to by the witnesses whose names we have above set forth; if it be true, as stated by these witnesses, that there is nothing in this flour which could in any manner be injurious to health or have any injurious effects upon any person who might consume it; if that is the true condition of the flour, then it must be plain that Congress never intended to exclude this flour from the market.

It must be very plain that the trial court by his instructions entirely eliminated from the act under which these proceedings are had the qualifying words "which may render it injurious to health". By the instructions which he gave on this branch of the case, he ignored those words and refused to submit to the jury the question as to whether or not the flour in question contained anything which might render it injurious to health.

This Court, in the case of **Lochner v. New York**, 198 U. S. 45 (25 S. C. R. 539), held unconstitutional the law enacted by the State of New York governing employment in bakeries. This act was declared unconstitutional on the ground that it was an unwarranted attempt to exercise police powers, and a mere arbitrary rule without reasonable foundation on which to base it.

The mere assertion that the adding of nitrites to flour by this process in a remote degree relates to public health does not necessarily render this flour subject to confiscation. The question must be met as to whether or not this carload of flour which is now sought to be condemned and destroyed contained anything which in the language of the act "may render

it injurious to health". The fact that some other flour under some other conditions might be injurious to health, or the fact that nitrites if taken in concentrated form and under certain conditions might be injurious to health, is not sufficient to justify the condemnation and destruction of this flour.

In the case at bar, if the testimony to which reference has been made can be believed, then there is no reasonable foundation for holding that it is necessary or appropriate to safeguard the public health or the health of the individuals to destroy and condemn the flour in question.

This doctrine is also maintained by the several state courts as shown by the following decisions:

In the case of **State v. Layton**, 160 Mo. 474, the Supreme Court, in quoting approvingly from a decision of the United States Supreme Court, say:

> "Said the Supreme Court of the United States in **Mugler v. Kansas**, 123 U. S., *l. c.* 661: 'It does not follow that every statute enacted, ostensibly for the promotion of these ends (that is the health, morals and safety of the people) is to be accepted as a legitimate exertion of the police powers of the state. There are, of necessity, limits beyond which legislation cannot rightfully go'. * * * 'To what purpose', it was said in **Marbury v. Madison**, 1 Cranch. 137, 'are powers limited, and to what purpose is that limitation committed in writing, if these limits may, at any time, be passed by those intended to be restrained?' * * * The courts are not bound by mere forms, nor are they to be misled by mere pretenses. They are at liberty—indeed, are under a solemn duty—to look at the substance of things, whenever they enter upon the inquiry whether the Legislature has transcended the limits of its authority. If, therefore,

a statute purporting to have been enacted to protect the public health, the public morals, or the public safety, has no real or substantial relation to those objects, or is a palpable invasion of **rights secured by the fundamental law,** it is the duty of the courts to so adjudge, and thereby give effect to the Constitution."

In the case of **State v. Addington,** 12 Mo. App., *l. c.* 219, the Court says:

"But extensive as this (police) power is, it may be conceded that an act of the Legislature in restraint of liberty or of property which exceeds a reasonable exercise of it, so that in fact it is not an exercise of the police power, but a capricious invasion of private right, will be held unconstitutional and void by the judicial courts."

And in the case of **State v. Fisher,** 52 Mo. 174, it is said:

"A law which unnecessarily and oppressively restrains a citizen from engaging in any traffic, or disposing of his property as he may see fit, although passed under the specious pretext of a preservation of the health of the inhabitants, would be void. Such a law would be unreasonable and would deprive the people of the **rights guaranteed to them by the organic law of the land.**"

The same Court, quoting approvingly from **Toledo v. Jacksonville,** 67 Ill. 37, say:

"It is not within the power of the General Assembly under the pretense of exercising the police power of the state, to enact laws not necessary to the preservation of the health and safety of the community, that will be oppressive and burden-

some upon the citizen. If it should prohibit that which is wholesome in itself, or command that to be done which does not tend to promote the health, safety or welfare of society, it would be an injurious exercise of power, and it would be the duty of the courts to declare such legislation void."

In the case of **River Rendering Co. v. Behr**, 77 Mo. 9, the Court say:

"The ordinance in question cannot be maintained as a police regulation. It can never be necessary to take from one man his property to give it to another, until the property is in such condition that it is, or is so used that it is likely to become a **nuisance**; and even in the latter case, **until it has become a nuisance**, an opportunity should be given the owner to change the use, or make such disposition of his property as will prevent the apprehended danger."

The case of McConnell v. McKillipp, 71 Neb., p. 712, was a case where the game law of Nebraska provided for seizure and confiscation of the gun or other weapon of the hunter when caught hunting "out of season". In a case where the statute was invoked the Court say:

"No case has been brought to our attention in which a court has construed a statute which provides for the seizure, forfeiture to the state, and sale of property of the kind involved in this case which has been used in violation of the game laws. * * * In **Colon v. Lisk**, 153 N. Y. 188, 60 Am. St. Rep. 600, 47 N. E. 302, a later case than **Lawton v. Steele**, a statute providing that every vessel unlawfully used in interfering with oysters planted in the waters of the state may be seized by the game

protectors, and upon six days' notice a Justice might take evidence, and, if found to be so engaged, the vessel should be ordered sold and the proceeds paid to the commissioner of fisheries, game and forestry, was held unconstitutional, the Court saying: 'It is to be observed, in passing, that the use for which vessels and fixtures may be forfeited under this act **does not constitute a nuisance**, either at common law, or under this or any other statute. Nor is the property itself a nuisance. Hence it is obvious that the validity of this act cannot be maintained upon the ground that either the act or the property is a public nuisance, and, consequently, that the Legislature had the power to authorize its abatement.' "

III.

THE INTERPRETATION PLACED UPON THE ACT OF JUNE, 1906, BY THE CIRCUIT COURT OF APPEALS IS REASONABLE, GIVES EFFECT TO ALL THE LANGUAGE CONTAINED IN THE ACT, AND IS THE ONLY INTERPRETATION UNDER WHICH ITS CONSTITUTIONALITY CAN BE SUSTAINED.

(*a*) In construing the Act of 1906, so far as it applied to the issue of adulteration, the Court of Appeals gave effect to the words, "Which may render such article injurious to health". The trial court, by its interpretation of the law, completely ignored those words. In considering this matter the Circuit Court of Appeals said:

"The object of the law was evidently: (1) to insure to the purchaser that the article purchased was what it purported to be; and (2) to safeguard the public health by prohibiting the inclusion of

any foreign ingredient deleterious to health. **Hall-Baker Grain Co. v. United States** (C. C. A.), 198 Fed. 614. The statute is to be read in the light of these objects, and the words 'injurious to health' must be given their natural meaning. It will be observed that this paragraph of the statute does not end with the words 'added deleterious ingredient'; but as a precaution against the idea embodied in the instruction complained of, it says, 'which may render such article injurious to health.' Without these latter words, it might with more force be argued that deleterious and beneficent ingredients are to be divided into two general classes, independent of their particular effect, in the actual quantities administered, but the possibility of injury to health due to the added ingredient and in the quantity in which it is added is plainly made an essential element of the prohibition. The investigation does not stop with the consideration of the poisonous nature of the added substance. It is added to the article of food, and the statute only prohibits it if it may render such article—the article of food—injurious to health." * * *

"The instruction complained of eliminated the consideration of any possible injurious effect from the use of flour as an article of food and was erroneous." * * *

"The constitutionality of the Food and Drugs Act is attacked by the plaintiff in error and was exhaustively argued. The point of the attack is that the statute as construed by the trial court applied to food products in fact entirely innocuous, and which could not possibly be injurious to health or deceptive. As we have not so interpreted the statute, it is not necessary to express any opinion as to the validity of a statute excluding from interstate commerce harmless food products which are offered for sale without deception."

The instructions requested by the respondent are in harmony with the interpretation of the law as made by the Circuit Court of Appeals. By this interpretation each part of the statute is given its usual and ordinary meaning. If Congress had intended to place under the ban of the law each and all of these food products where a substance deleterious in its nature was added to it, without regard to the effect such ingredient had upon the food product, then it is fair to assume that Congress would have omitted from the act the words "which may render such article injurious to health".

Congress evidently realized to the fullest extent that to prohibit the sending of this flour into interstate commerce when the flour was in no wise injurious to health would be an arbitrary and unwarranted interference with the right of the Lexington Mill & Elevator Company, and that such an attempt on its part would not be sustained by this Court.

The purpose which Congress had in view in the enactment of this statute was to protect the health of the citizen. If the flour seized in this case could not under any circumstances, due to the fact that it had been treated by the Alsop process, become injurious to health, then there was no reason why Congress should legislate respecting it, and no reason why it should attempt to forbid the placing of the flour into interstate commerce.

The rule of construction or interpretation of statutes adopted by the Circuit Court of Appeals was in harmony with the rule laid down by this Court in the case of **Knowlton v. Moore,** 178 U. S. 41, where it was said:

> "We are, therefore, bound to give heed to the rule that where a particular construction of a

> statute would occasion great inconvenience or produce inequality and injustice, that view is to be avoided if another and more reasonable interpretation is present in the statute." (Citing **Refrigerator Co. v. Sulzberger,** 157 U. S. 37; **Wilson v. Rosseau,** 4 How. 646; **Bloomer v. McQuewan,** 14 How. 539; **Blake v. Nat'l Bank,** 23 Wall. 387; **United States v. Kirby,** 7 Wall. 482.)

That was in perfect harmony with the rule of construction of statutes laid down by this Court in the case of **Collins v. State of New Hampshire,** 171 U. S. 30, as follows:

> "In whatever language a statute may be framed its purpose must be determined by its natural and reasonable effect, and such purpose is to be taken into consideration in passing on its validity."

The language used by the Circuit Court of Appeals of the Eight Circuit in the case of **Interstate Drainage & Investment Co. v. Board of Commissioners,** 158 Fed. 270, announces a well recognized and reasonable rule of construction. The language used is as follows:

> "The essential object in judicial construction of statutes should be from a consideration of all its parts to discover the legislative mind in enacting it. When the true intention is ascertained, it should prevail over literal terms. So when the expression is special or particular but the reason general, the special should be deemed general. Any construction that leads to absurd results should be avoided when the trend of the act admits of a different sensible application."

Apply that rule to the case at bar, and there would

be no question of the soundness of the interpretation of the act in question as made by the Circuit Court of Appeals. The construction placed upon the act in question by the trial court "leads to absurd results" which, as said by that court, "should be avoided", while the construction placed on it by the Court of Appeals is in every way a "sensible application".

The statute in question is a penal statute and the rule applicable to the construction of such statutes was well stated by Sanborn, Circuit Judge, in the case of **Martin v. United States**, 168 Fed. 198 (201), as follows:

> "In the absence of this section, the act of the plaintiff was neither legally nor morally wrong. The punishment it prescribes is severe, and a penal statute which creates and denounces a new offense should be strictly construed. The definition of such an offense and the classification of the offenders are legislative and not judicial functions. An act which is not by the express will of Congress an offense may not be made so after its commission by a broad construction of the statute subsequently adopted by the judiciary. One who does not fall clearly within the class of persons specified in such a law before he performs the act charged upon him may not be brought within that class after the event by judicial construction."
>
> **United States v. Wiltberger**, 5 Wheat. 77;
> **United States v. Germaine**, 99 U. S. 508;
> **Field v. United States**, 137 Fed. 6;
> **United States v. Lake**, 129 Fed. 499.

(*b*) The intent of Congress, as indicated by the title of the Act, was to make the condition of the food the determining factor of adulteration.

The title of the Act is as follows:

> "An act for preventing the manufacture, sale or transportation of adulterated or misbranded or **poisonous** or **deleterious foods,** drugs, medicines and liquors, and for regulating traffic therein, and for other purposes."

It will be seen from this title that the act was directed against, *inter alia*, "poisonous or deleterious foods". There can be no question here as to what the words "poisonous" and "deleterious" qualify. It is "foods"; not "ingredient". Manifestly a food cannot be poisonous or deleterious unless, when consumed, it will produce harmful or untoward effects upon the human system. The act is directed against poisonous and deleterious foods which are such **from their condition,** *e. g.*, that of putrefaction, as well as against poisonous and deleterious foods which are rendered such by the addition of an added poisonous or deleterious ingredient. (See sub-division 6. of Section 7, of the act.) But in either case it is the character of the food in relation to health which is made the determining factor. Obviously a pure, wholesome, food cannot be rendered poisonous or deleterious by an added substance unless that substance, by its presence, is capable of transforming the food into an unwholesome product. The quantity of the added substance required to work this transformation may be relatively large, or relatively small. We do not understand that the law is concerned with quantity, *per se*, at all. The question to be answered is not "How much has been added" or "How much may be added without injury to health"? In certain cases, the determination of these questions may be involved in arriving at the ultimate fact. But that ultimate fact depends for its solution, under the law as we conceive

it, upon the answer to the broader question: "Has that which has been added rendered the article of food injurious to health"? Clearly this may be referable to the character of the added substance, irrespective of quantity. Milk or water containing typhoid or tubercular bacilli would be condemned, not on a quantitative or qualitative theory, but because the **character** of these ingredients renders the milk or water dangerous for human consumption. We have never contended that this law imposed upon court or jury the burden of deciding how much of an alleged poisonous substance it would be safe to add to foods. This would be requiring legislation of the courts. But what we do contend is that the law is directed against all poisonous or deleterious **foods**, of which those rendered so by the addition of harmful substances are only a class; and that it imposes on court or jury the duty of deciding the character, in these respects, of such foods as may be brought in question.

We submit, therefore, that the Circuit Court of Appeals was clearly right in the following statement and finding:

> "It will be observed that this paragraph of the statute does not end with the words "added deleterious ingredient", but as a precaution against the idea embodied in the instruction complained of, it says "which may render such article injurious to health". Without these latter words it might, with more force, be argued that deleterious and beneficent ingredients are to be divided into two general classes independent of their particular effect in the actual quantities administered, **but the possibility of injury to health due to the added ingredient and in the quantity in which it is added is plainly made an essential element of the prohi-**

bition. The investigation does not stop with the consideration of the poisonous nature of the added substance. It is added to the article of food and the statute only prohibits it if it may render such article—the article of food—injurious to health".

The principle of construction adopted by the Court of Appeals is amply sustained in numerous decisions, of which we quote briefly from a few below:

"The popular and received import of words furnishes the general rule for the interpretations of public laws."

Maillard v. Lawrence, 16 How. (U. S.) 251.

"The Legislature must be presumed to use words in their known and ordinary signification, unless that sense be repelled by the context."

Levy v. M'Cartee, 6 Pet. U. S. 110.

"I think I may say that unless there be something in the context which deflects the word from its ordinary meaning, and shows a clear intention to use it in a more general or a more limited sense, the former ought to prevail."

Per Justice Story in Parsons v. Hunter, 2 Sumn. U. S. 422.

"It is a general rule, without exception, in construing statutes, that effect must be given to all their provisions, if such a construction is consistent with the general purposes of the Act, and the provisions are not necessarily conflicting.

Bernier v. Bernier, 147 U. S. 246.

"We are not at liberty", said Mr. Justice Strong, "to construe any statute so as to deny effect to any part of its language. It is a cardinal rule of statutory construction that signification and effect, shall, if possible, be accorded to every word.

As early as in Bacon's Abridgement it was said that 'A statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word, shall be superfluous, void, or insignificant'; this rule has been repeated innumerable times."

Washington Market Co. v. Hoffman, 101 U. S. 115.

To the same effect see

U. S. v. Fisher, 109 U. S. 145;
Lake Superior Ship Canal Co. v. Cunningham, 155 U. S. 380;
Rhodes v. Iowa, 170 U. S. 423.

"Where a law is expressed in plain and unambiguous terms, whether those terms are general or limited, the Legislature should be intended to mean what they have plainly expressed, and consequently no room is left for construction."

Mr. Justice Lamar in Lake County v. Rollins, 130 U. S. 670.

"The cases are so numerous in this court to the effect that the province of construction lies wholly within the domain of ambiguity," said Mr. Justice Brown, "that an extended review of them is quite unnecessary."

Hamilton v. Rathbone, 175 U. S. 421.

"Attempted judicial construction of the unequivocal language of a statute serves only to create doubt and to confuse the judgment."

Swarts v. Seigel (C. C. A.), 117 Fed. Rep. 18.

See also:

Glover v. U. S., 164 U. S. 298;
Harless v. U. S. (C. C. A.), 88 Fed. Rep. 102.

We believe no one on reading the section of this statute under discussion, would get any other idea from

it than that which the language thereof on its face clearly imports. The contention of the Government not only involves a distortion of language as well as meaning, but, as we have heretofore stated, it requires the absolute cancellation of the words which the proceedings in Congress, as heretofore alluded to, show were deliberately and intentionally placed in the section to avoid the identical construction which the Government now seeks to place upon this section.

(*c*) **The construction of the law contended for by the Government would render contraband many admittedly harmless articles of food.**

To say that a substance is qualitatively poisonous is merely to give it a name without attributes. Such substances may or may not be harmful, according to circumstances. There are many substances, qualitatively poisonous, which in appropriate amounts are not harmful even if used continuously. As familiar illustrations of these may be mentioned potassium chloride, common salt, baking powder, acetic acid of vinegar and cider, alcohol, benzoic acid, and benzoate of soda. (See testimony of Government witnesses, Folin, p. 883, and Stengel, p. 821-822). Yet each of these substances will produce serious injury and death if taken in a sufficiently large amount. The term "qualitatively poisonous" applies just as certainly to baking powder, vinegar, table salt, etc., as it does to nitrites. If the law is to be construed to bar from interstate commerce all food products which may contain an added substance which is **qualitatively** poisonous, and for that reason only, it will just as certainly apply to every food product containing salt, baking powder, vinegar, alcohol, and benzoate of soda, as it will to bleached flour containing nitrites.

The words "poisonous" and "deleterious" connote, when applied to a substance, that it has the property, or power, of acting to produce an effect, when consumed, which is detrimental or injurious to health. If, as a matter of fact, it **does** not so act, or further, if it **cannot** so act, it is neither the one nor the other. Such a substance is within neither the terms nor the spirit of the law, which has for its object the protection of the health of the consuming public. In the light of human knowledge and experience, it is preposterous to say that the addition to foods of all substances **qualitatively** poisonous is prohibited by law, because scores of substances perfectly innocuous as ordinarily used, and of which we have given a few examples, are **qualitatively** poisonous. Unless, therefore, the law is to be made an absurdity, the question of fact to be determined is not the **name** of the added ingredient, but whether the use thereof may render the article of food injurious to health. The law deals with facts, not theories; no matter how fine the latter may be spun. It concerns itself with personal and property rights of a substantive character, and not with mere academic propositions, a decision as to which will remedy no evil and prevent no wrong.

(*d*) **Other well known articles of food, admittedly harmless, contain nitrites.**

The Court of Appeals, in their decision, state that the claimant proved "That nitrites in some or greater amounts are frequently present in potable water, bacon, ham, fruits and certain vegetables, and even in the saliva of both adults and children, and no evil result has been detected". Let us take the case of smoked products. Smoked ham, meat, tongue and

sausage are such universally known and used articles of food that we apprehend no one will attempt to question their legality under the law. The Government permits their transportation in interstate commerce without question. Yet, all of these products inevitably contain nitrite reacting material, and this substance is imparted to them by the smoking process. (See testimony of Government witnesses, Mitchell, Rec., p. 238, and Jones, Rec., p. 287; and of respondent's witness, Doctor Rockwood, Rec., p. 1597).

To condemn flour because it contains a minute amount of nitrite reacting material imparted to it by the bleaching process on the score of harmfulness, and merely by reason of the presence of a trace of the nitrite reacting material, is an act both unjustifiable and unreasonable in view of the age-long experience of the human race in consuming smoked meats containing this same nitrite reacting material, and without the suggestion of harm. There is no dispute whatever that nitrites are the same wherever found, or wherever produced. If, therefore, smoked meats containing it are harmless, bleached flour containing it is equally harmless.

IV.

THE COURT OF APPEALS COMMITTED NO ERROR IN SUSTAINING RESPONDENT'S CONTENTION THAT THERE WAS NO SUBSTANTIAL EVIDENCE TO SUPPORT THE CHARGE THAT THE SEIZED FLOUR WAS COLORED IN A MANNER WHEREBY DAMAGE OR INFERIORITY IS CONCEALED.

The Government made no case upon the allegations of paragraph (*b*) of the libel alleging adulteration,

which allegations were based upon the fourth subdivision of section 7 of the Act to the effect that a product is adulterated, "4th. If it be mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed."

The respondent assigned error in this respect that the Court erred in refusing to charge the jury as requested by it as follows: "There is no probative testimony or evidence in this case in support of the count or charge in the libel to the effect that the flour in question is mixed, colored, coated, or stained in a manner whereby damage or inferiority is concealed" (Rec., p. 2102).

The ruling of the trial court in refusing this instruction was the assigned error which the Court of Appeals had under consideration in its discussion of this issue. It was a court composed of learned and experienced judges, who, of course, had in mind the well-settled rule that in the consideration of such a case upon a writ of error the Court was without authority to weigh evidence. It is the province of the jury and the Court to determine questions of fact so that it at least is implied that when the Court delivered itself upon this subject it was confining itself to its well recognized and well-known jurisdiction. And in disposing of this contention the Court, in their opinion, in paragraph (5) say:

> "The claim of adulteration in the fourth subdivision (of section 7 of the Act) presents a different question * * * we are not persuaded that by the bleaching process flour is so colored as to conceal inferiority or that by it flour is adulterated within the intent of subdivision 4 of section 7 of the Act."

Whiteness in flour and in the bread product of flour is desirable in and of itself. The whitened flour was produced in good faith by an improved and approved process. The taste and judgment of the user approved it. It cannot be wrong to challenge time's monopoly in the matter of bleaching flour.

In the case of Naylord & Gerrard v. Alsop Process Company, Vol. 168 Fed. Rep., page 911, *l. c.* 915, the Court, in referring to this feature of flour, said:

> "Whiteness has long been a desirable quality in flour, and has been the controlling motive in the milling business. The whole system of bolting simply removes the darker portions of the wheat. Furthermore, as a matter of taste, whiteness in flour constitutes utility, within the patent law, as much as whiteness in sugar or yellowness in butter."

We respectfully submit that the Court of Appeals committed no error in its decision, and that said decision should be affirmed.

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SUPREME COURT

OF THE UNITED STATES.

UNITED STATES OF AMERICA,
Petitioner,

against

LEXINGTON MILL & ELEVATOR COMPANY,
Claimant-Respondent.

BRIEF OF RALPH S. ROUNDS AS *AMICUS CURIAE* IN SUPPORT OF THE CONTENTIONS OF THE LEXINGTON MILL & ELEVATOR COMPANY.

Both parties to this cause have consented to the filing of this brief by the counsel for the H. J. Keith Company as *amicus curiae*.

The H. J. Keith Company is interested in the issues raised in this case for the reason that it is engaged in the packing of frozen and dried eggs and in their sale in interstate commerce, and that it is subject to the provisions of the Pure Food Law. Its business, and indeed the entire egg business, will be vitally affected by the construction to be given to subdivision "Sixth" of Section 7, which provides that food shall be condemned if it consists in whole or in part of a "decomposed" substance, and by the determination of the meaning of "decomposed" as used in this section—whether

it is to be read in its broad, scientific sense according to which all food is decomposed to some extent and must consequently be condemned, or whether it is limited to foods which are so far decomposed as to constitute degradation from existing standards, or whether, as we believe, "decomposed" means "unwholesomely decomposed."

These questions are similar to those which arise in this case regarding the construction of the words "poisonous or other added deleterious ingredient" occurring in subdivision "Fifth" of the same section, and the limitation which this Court shall give to the words last quoted will naturally also be given to the word "decomposed," for there is no obvious distinction between the two sections. If foods must be condemned because poisonous substances are added in harmless quantities, it will surely be held that technical decomposition, even though so slight as to be entirely harmless, will be ground for condemnation; and if, on the other hand, it be held that food cannot be condemned unless the added ingredient is harmful in the quantities actually used, it must also be held that "decomposed" means "unwholesomely decomposed." In this sense the egg business and all food business will be vitally affected by the decision of the Court in this case.

On behalf of the Keith Company, we endeavored to raise these questions of construction upon a writ of error brought by that Company, which was heard in this Court at the last term, but the Court decided in favor of the Company upon jurisdictional points without expressing itself upon the question of construction. This decision was reported as

443 Cans of Frozen Egg Product v. *United States*, 226 U. S. 172.

The Government recognizes that the decision in this case will be of great importance to the Keith Company and to all food business, for in his petition for a writ of certiorari in this case, the Attorney-General says:

> "A decision on this paragraph of the statute will be of assistance also in construing other sections of the law. For instance, in *443 Cans of Frozen Egg Product* v. *United States* (226 U. S. 172), decided at this term on jurisdictional grounds, it was contended by plaintiff in error that food could not be condemned as filthy and decomposed under paragraph 6 of the section here involved unless it was so far gone as to be actually injurious to health."

The Lexington Mill & Elevator Company presents to the Court an able brief and we believe with that Company that the meaning of the section in question clearly applies only to food products which are rendered actually injurious by presence of poisonous or deleterious substances in harmful quantities.

We believe that these considerations should be decisive; and we file this brief only to supplement the arguments of the Lexington Company and to show that even if the Court should consider that the words of the section are ambiguous, it must nevertheless upon ordinary principles of construction decide the ambiguity in favor of the Lexington Company, and to show further that no limitation is admissible which is based on the idea of degradation from the existing standard of the food products in question.

POINTS.

If it be considered that the words in question are ambiguous, this court must construe those words and must give to them a meaning which shall make the statute reasonable and efficacious and thus accomplish the intent of Congress: and we submit that the sentence must be construed as meaning: "If it contain any added poisonous or other added deleterious ingredient which *in the quantities used* may render such article injurious to health."

Various principles of construction apply and these we set forth below.

The phrase must be construed strictly, as the Food Law is a penal statute.

This was so held in *United States* v. *Johnson*, 177 Fed. 313, 317 (affirmed 221 U. S. 488), where the Court said: "As this is a criminal statute, creating a new offense, it must be strictly construed and applied." This rule of statutory construction applies to a proceeding to forfeit goods as well as to a criminal prosecution, as was held with regard to this very statute in *United States* v. *Seventy-four Cases of Grape Juice*, 181 Fed. 629, 630."

U. S. v. *Eighty-four Boxes of Sugar*, 7 Pet. 453, 463.

U. S. v. *A Lot of Silk Umbrellas*, 12 Fed. 412.

U. S. v. 1150 1/2 *Pounds of Celluloid*, 82 Fed. 627.

The purpose of the Food Law is to prevent the sale of fraudulent and unhealthful products.

In this connection it is proper to consult the President's messages and the reports of Congressional committees.

Johnson v. *Southern Pacific Co.*, 196 U. S. 1, 19.
Binns v. *United States*, 194 U. S. 486, 495.
The Delaware, 161 U. S. 459, 472.
Oceanic Navigation Co. v. *Stranahan*, 214 U. S. 320, 333.

The President's message to the First Session of the 59th Congress urging this Act says at page 44:

> "Such a law would protect legitimate manufacture and commerce and would tend to secure the *health* and welfare of the consuming public. Traffic in food stuffs which have been debased or adulterated *so as to injure health or deceive purchasers* should be forbidden."

Following the President's recommendation, a bill was introduced in Congress which subsequently became the Food and Drugs Act, and in reporting the bill, the House Committee made a careful statement of its scope and object (see House Committee Report No. 2118, 59th Congress, First Session).

> "One of the principal objects of the bill is to prohibit in the manufacture of foods intended for interstate commerce the addition of foreign substances poisonous or *deleterious to health*" (p. 6).
>
> "We believe every one recognizes the necessity of governmental regulations to prevent the sale of *adulterated, poisonous, or other injurious* food products. * * * In so far as these (mixtures, adulterants, and preservatives) are harmless, and are not used as a fraud upon the purchaser or user they may be of great benefit, but the ingenuity of man in providing either the adulteration or the preservation of food products by the use of substances which are injurious and harmful to the human system must be met by governmental restraint" (p. 8).

Senator Heyburn, a member of the Senate Committee, which reported the bill, said in opening the debate upon it:

> "It has seemed to the committee in presenting this bill that the first consideration was to prevent the manufacture of articles that were deleterious to health and to prevent the combination of articles that would deceive and defraud the public. That was the primary object of the committee in preparing this bill" (Vol. 40, Congressional Record, p. 894).

The purpose and public policy of the law is clearly shown by its title, which is as follows:

> "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes."

As "adulterated" is obviously used in the ordinary sense, we have two words in the title which show its character as a statute for the prevention of frauds, and two words, "poisonous" and "deleterious," which cover the health aspect of the statute and show that its purpose was to protect the public health.

The courts have uniformly held that the purpose of the law is to prevent fraud and protect the public health.

United States v. *Morgan*, 222 U. S. 274, 281, speaks of the food law as "a law passed in the interest of the public health."

United States v. *Johnson*, 177 Fed. 313, 315 (affirmed 221 U. S. 488).

> "The very title of the Act indicates its scope and purport. Its underlying purpose was *to protect the public health* against imposition upon the users of food, drugs, and

medicines which were adulterated, misbranded, poisonous, or deleterious."

United States v. *One Car Load of Corno Horse & Mule Food*, 188 Fed. 453, 463.

"The great object of the statute is to *prevent injury to health and deception* by putting words or devices on the label which may naturally lead the purchaser to believe that he is getting one thing when in reality he is getting another."

United States v. *Five Boxes of Asafoetida*, 181 Fed. 561, 565:

"The purpose of this act is to *conserve the public health* by preventing interstate commerce in poisonous or deleterious food and drugs."

United States v. *1950 Boxes of Macaroni*, 181 Fed. 427:

"It is the duty of the Court to give the Act a fair and reasonable construction for the accomplishment of its object. That object is the exclusion from interstate commerce of food products so adulterated as to *endanger health*."

United States v. *Buffalo Cold Storage Co.*, 179 Fed. 865, 866:

"Congress by its enactment intended to promote honesty and fair dealing in trade and secure to the public *pure and wholesome food* and drugs, and manifestly there must be a reasonable construction of the Act to carry out the intention of Congress in this regard."

French Silver Dragee Co. v. *United States*, 179 Fed. 824, Circuit Court of Appeals, Second Circuit, where the Court, speaking by Judge NOYES, says:

"And, examining the particular section now in question (Section 7), we find the purpose all through it to protect the public from deceit and injury. Drugs are declared to be adulterated if their strength or purity fall below certain standards. The intent to prevent both deceit and injury are here apparent. So food is deemed to be adulterated:

"(1) If its quality or strength is reduced by the mixture of other substances;

"(2) If one substance has been substituted for another;

"(3) If a valuable ingredient has been abstracted;

"(4) If it is mixed or colored so that damage or inferiority is concealed;

"(5) If poisonous ingredients or ingredients making the article injurious to health are added;

"(6) If the article consists of decomposed or putrid animal or vegetable substances.

"The obvious purpose of provisions (1), (2), (3), and (4) is to protect the public from deceit and false pretenses; of provisions (5) and (6), from injury to health.

"Other sections of the Act also indicate the same objects. The terms 'false,' 'misleading,' 'deceive,' 'poisonous,' 'deleterious,' appear in many places. Indeed, a careful examination of the whole Act clearly shows that its object is, as already indicated:

"(1) To prevent deceit and false pretenses in the sale of food and drugs;

"(2) To *safeguard the public health.*

* * * * * * * *

"Stated in another way, we think that the history of the Act, the objects to be accomplished by it, and the language of all its provisions require that it should be so interpreted that in the case of confectionery, as in the cases of food and drugs, the Government should establish, with respect to products not specifically named, that they either deceive, or are calculated to deceive, the public or are detrimental to health; and,

> as no proof was offered in this case tending to show that the confectionery in question was either deceptive or injurious, the defendant was improperly convicted."

Ex parte Kohler, 74 Cal. 38, 42, is an interesting case. The Court held, contrary to the wording of the statute, that a statute requiring a label was not intended to apply to *pure* wines nor to restrict the sale of pure wines, reaching this conclusion apparently because such a restriction would have no relation to the public health.

> "All legislation directed against the adulteration and simulation of articles of food and drink is aimed at a common object—the preservation of the public health. The Court will take judicial notice of the evils preceding such legislation, and the mischiefs intended to be prevented thereby, the character and importance of the interests of the State which may be affected thereby, and the usual course of business. A knowledge of these matters is often necessary to a full and fair understanding of the force and effect of the law, and is a valuable help in ascertaining its true intent and meaning."

The court is bound to place upon the phrase a limitation which will promote the health purpose of the Food Law and which will go no further in the condemnation of food than is required for that health purpose; the limitation which is based on quantity as well as quality and by which the section condemns only articles actually injurious to health is the only limitation which fully and exactly serves the purpose of the law and nothing more.

It is possible that Congress could by words absolutely clear beyond question have condemned all foods containing poisonous or deleterious ingredi-

ents in any quantity, but every presumption will be against such a construction. And when this Court is, because of the ambiguity of the section in question, called upon to declare the meaning of the section, it must adopt a construction which will clearly advance the purpose of the law and which has a clear relation to the public health. With the Court there is no room for speculation or imagination or caprice, and it is not free to adopt any construction except one which tends to protect the public health and does not go beyond the health purpose of the law.

Obviously the purpose of the statute is served and fully and exactly served by excluding all substances which contain poisonous or deleterious ingredients in harmful quantities and by excluding nothing more. This construction goes as far as the purpose of the law requires and no further.

We shall show in the following points that all the other considerations and principles of construction lead to the same conclusion.

The same result is reached if the phrase is interpreted in the light of the common law which made it a crime to sell unwholesome food.

Where the purpose of a statute is in general the same as that of the common law, it will be presumed that the Legislature intended to re-enact in statute form the common law rules. This doctrine is well established in the federal courts, even where there is no antecedent federal common law upon the subject.

Standard Oil Co. v. *United States*, 221 U. S. 1, 59, 60, is a striking example. Even though there was no federal common law against monopolies, this Court construed the anti-trust law in the light of the old English and American common law and limited the general words of the statute so as to

carry out the principles and effectuate the purposes of the common law.

United States v. *Carll*, 105 U. S. 611. A statute of the United States made it a crime for a person with intent to defraud to utter any forged obligation of the United States. Under an indictment couched in the words of the statute, the defendant was tried and convicted, but the Supreme Court reversed the conviction notwithstanding the general words of the statute, saying:

> "The language of the statute on which this indictment is founded, includes the case of *every* person who, with intent to defraud, utters any forged obligation of the United States. But the offense at which it is aimed is similar to the common law offense of uttering a forged or counterfeit bill. In this case, as in that, knowledge that the instrument is forged and counterfeited is essential to make out the crime; and an uttering, with intent to defraud, of an instrument in fact counterfeit, but supposed by the defendant to be genuine, though within the words of the statute, would not be within its meaning and object."

There was no federal common law of forgery antecedent to this statutory crime, but the Court limited the words of the statute by including in the definition of the crime the element of guilty knowledge and thereby making the statutory crime similar to the common law crime as existing in England and in the States of this country.

Kepner v. *United States*, 195 U. S. 100, 125, 132, in which the Court was called upon to construe the words "no person for the same offense shall be twice put in jeopardy of punishment" as included in the Act of Congress relating to the Philippine Islands. It was contended that this provision should be interpreted in view of the Spanish system

of law prevailing in the Philippine Islands, by which the Government was allowed to appeal in the event of an acquittal. But the Court rejected this rule of interpretation and interpreted the phrase according to the rules of the old English common law, and held that the Philippine defendant had the same rights as those granted to Englishmen by the English common law.

> "In ascertaining the meaning of the phrase taken from the bill of rights it must be construed with reference to the common law from which it was taken."
>
> "We find a vast number of adjudications of the highest judicial tribunals of the different states and many of the federal courts to the effect that no such retrial is authorized by the common law, and is directly interdicted by the Constitution of the United States, and also of most of the several states."

U. S. v. *Sanges*, 144 U. S. 310, 311. The defendant was indicted for violating the constitutional rights of a third party, and a demurrer to the indictment was sustained. The Government took a writ of error under a statute declaring that "writs of error may be taken from the District Courts direct to the Supreme Court in any case that involves the construction of the Constitution of the United States"; but although the Supreme Court recognized that the construction of the Constitution was involved, it dismissed the writ of error, holding that, although the constitutional provisions of double jeopardy did not apply and although there was no statute or rule of federal law qualifying the broad statute above quoted, nevertheless the writ of error should be denied because of the rule which prevailed at the English common law that no one should be vexed twice for the same offense. The Court says:

> "This statute, like all Acts of Congress, and even the Constitution itself, is to be read in the light of the common law, from which our system of jurisprudence is derived."

This decision is extremely interesting because the Court held that the case was not covered by the constitutional provision, but only by the common law, and the Court thus read into the Judiciary Act a qualification found in the old English common law.

U. S. v. *Wong Kim Ark*, 169 U. S. 649, 653. This is a case where this Court determined the meaning of the Constitution by consideration of the old English law, saying:

> "In construing any act of legislation, whether a statute enacted by the Legislature, or a constitution established by the people as the supreme law of the land, regard is to be had, not only to all parts of the act itself, and of any former act of the same law-making power, of which the act in question is an amendment; but also to the condition, and to the history, of the law as previously existing, and in the light of which the new act must be read and interpreted."

Moore v. *U. S.*, 91 U. S. 270, 274.

> "The language of the Constitution and of many acts of Congress could not be understood without reference to the common law."

8 Cyc., 386.

> "Where an act of Congress punishes an offense without defining it otherwise than by giving it a common-law designation, such as murder, larceny, robbery, etc., the courts look to the common law for the definition and elements of the offense."

At the common law, both in England

and in the several States, it was a criminal offense to offer for sale unwholesome food or food or drink to which poisonous or deleterious substances had been added to such an extent as to make the article injurious to health—so that the health provisions of the Food Law cover the same general ground as those of the common law. Unwholesomeness was a necessary element of the offense at common law and it must be held to be a necessary element under the section in question of the definition of the words used in the present statute.

Bishop on Criminal Law (8th Ed.), Par. 491:

> "It is indictable at the common law to make unwholesome a water supply or provisions meant for use in the community, or to sell for such use food injurious to the health. Even the mere exposure in an open market for sale, of things thus injurious, or the sending of them there for the purpose, constitutes the complete offense at common law. And the common carrier who brings them to market, with knowledge, is indictable."

19 Cyc., 1086—*Note* 3:

> "The selling of unwholesome provisions or the mixture of poisonous ingredients in the food or drink of another to such an extent as to impair the health of any individual receiving them is punishable by indictment at common law."

State v. *Norton* (1841), 24 N. C. 40.

Defendant was indicted and convicted for knowingly selling unwholesome provisions. Upon appeal a new trial was ordered upon the ground as stated in the following opinion by the Court:

> "Knowingly selling unwholesome provisions is a misdemeanor at the common law

The Judge charged the jury that it was not necessary that the meat sold should be such as to produce sickness or death, when eaten, if it was in such a state as to render it unfit to be eaten, according to the usages of a decent and christian people. We think that the charge was too broad. The gist of the offense consists in the knowingly selling for lucre, provisions, which may be injurious to the health of those who are to consume them. To support this indictment, the meat sold must have been in such a state, that, if eaten, it would, by its noxious, unwholesome, and deleterious quality, have affected the health of those who were to have consumed it."

Goodrich v. *The People*, 19 N. Y. 574, 578:

The defendant was indicted and convicted under a common law indictment for selling unwholesome provisions. In sustaining the verdict and commenting upon the charge to the jury, the Court of Appeals said:

"As I understand the evidence of the physicians, the eating of diseased meat, although it produces no obvious ill effects, does in reality injure the health of those who partake of it. The jury must have understood from the charge that they could not convict the defendant unless the meat was in such a state as to injuriously affect the health of those who ate it; but that it was not necessary to his conviction that the injury should be apparent to the senses, if the medical testimony established the fact that it did or would injure the health of those who partook of it, provided the defendant knew the cow was diseased from which the meat was taken."

State v. *Buckman* (1836), 8 N. H. 203, 205.

Defendant was indicted and convicted for throwing into a well the carcass of an animal whereby

the water became greatly corrupted, unwholesome and poisonous. The Court sustained the conviction on the ground that it was an indictable offense at common law:

> "The selling of unwholesome provisions, or the mixture of poisonous ingredients in food or drink designed for any individual, are indictable offenses at common law, whether done through malice or a desire of gain merely. * * * Furnishing such provisions in any manner, or causing such unwholesome matter to be used, constitutes the offense. There can be no question but the mixture of poisonous ingredients with the food or drink of another to such an extent as to impair the health of any individual receiving them, is punishable by indictment at common law; and water infected with the noisome particles and effluvia of a dead animal thrown into it, must partake of a character so poisonous and unwholesome as properly to come within this class of offences."

State v. *Smith* (1824), 10 N. C. 378.

> "It is a misdemeanor at common law knowingly to give any person injurious food to eat, whether the defendant be excited by malice or a desire of gain. It seems upon the whole, that the public health, whether affected through the medium of unwholesome food, or poisoning the atmosphere, or introducing infectious diseases, is anxiously guarded by the common law."

A civil action for damages could also at the common law be brought by the vendee against the vendor of unwholesome provisions. See 21 L. R. A. 140, and cases cited in the note.

The health provisions of the food law and of the common law regarding the sale of unwholesome food are thus closely parallel, and just as in the

Carll case, above cited, this Court narrowed the general words by introducing into the definition of the statutory crime the element of guilty knowledge of the counterfeit so as to conform the statutory crime to the common law crime, so in our case this Court should narrow the general words by introducing into the definition of the crime of forfeiture the element of unwholesomeness, so as to conform to the common law offense.

To omit the qualification of wholesomeness or injury to health would be to condemn and destroy wholesome food. Congress did not intend any such result. Statutes will not be construed to condemn wholesome food if any other construction is possible.

Whatever saves and makes available perishable food, increases the food supply of the nation and diminishes the cost of living, and thus directly benefits the public, and it also safeguards the public health, for one who is well nourished has the power to resist disease.

Obviously every food law must affect the food supply and the cost of living and must be deemed to have been passed, and must be interpreted, in view of the strong public policy in favor of conservation of food; and a food law whose wording is doubtful must be construed, if possible, so as not to apply to wholesome food and so as to favor food conservation. An example of such construction is furnished by *Ex parte Kohler*, 74 Cal. 38, above mentioned.

This court has in many notable instances limited general words of statutes by construction.

Standard Oil Co. v. *United States*, 221 U. S. 1, 59, 60, 68, is in many respects similar to ours. There was a remedial statute passed for the protection of the public, and the Legislature, in order

to fully accomplish the purpose of the statute, used words which in their ordinary sense would condemn all business transactions. But this Court, recognizing that construction was necessary, considered the purposes of the act and the prior legislation and held that the broad general words were subject to reasonable qualifications.

American Security Co. v. *District of Columbia*, 224 U. S. 491, 494, 495, limited the general phrase "any law of the United States" to mean only those laws having a general application throughout the United States.

> "Of course, there is no doubt that the special act of Congress was in one sense a law of the United States. * * * But * * * some reasons for strict construction apply here. * * * If, then, the words have the meaning given them by the applicants, the appellate jurisdiction of this Court has been largely and irrationallly increased. We believe Congress meant no such result. A well-known example of construing a statute not to include a case that indisputably was within its literal meaning, but was believed not to be within the aim of Congress, is *Church of the Holy Trinity* v. *United States*, 143 U. S. 457."

Holy Trinity Church v. *United States*, 143 U. S. 457. A statute provided broadly that "it shall be unlawful for any person in any manner whatsoever, to assist or encourage the migration of any foreigner into the United States under contract made previous to the migration of such foreigner to perform labor or service of any kind in the United States." The church contracted with a clergyman in England to enter its service as rector and it was prosecuted and convicted under the statute. In reversing this judgment, Mr. Justice HARLAN says at pages 458 and 459:

"It must be conceded that the act of the corporation is within the letter of this section, for the relation of rector to his church is one of service, and implies labor on the one side with compensation on the other.

* * *

"While there is great force to this reasoning, we cannot think Congress intended to denounce with penalties a transaction like that in the present case. It is a familiar rule that a thing may be within the letter of the statute and yet not within the statute, because not within its spirit, nor within the intention of its makers. This has been often asserted, and the reports are full of cases illustrating its application. This is not the substitution of the will of the Judge for that of the legislator, for frequently words of general meaning are used in a statute, words broad enough to include an act in question, and yet a consideration of the whole legislation, or of the circumstances surrounding its enactment, or of the absurd results which follow from giving such broad meaning to the words, makes it unreasonable to believe that the legislator intended to include the particular act."

The opinion concludes as follows:

"The construction invoked cannot be accepted as correct. It is a case where there was presented a definite evil, in view of which the Legislature used general terms with the purpose of reaching all phases of that evil, and thereafter, unexpectedly, it is developed that the general language thus employed is broad enough to reach cases and acts which the whole history and life of the country affirm could not have been intentionally legislated against. *It is the duty of the courts under those circumstances, to say that, however broad the language of the statute may be, the act, although within the letter, is not within the intention of the*

Legislature, and therefore cannot be within the statute."

Lau Ow Bew v. *United States*, 144 U. S. 47, 61.

The statute provided that "every Chinese person, other than a laborer" should before being admitted into this country present a certain certificate. The Court held that this did not include a Chinese merchant who had been domiciled for seventeen years in the United States, and the Court quotes with approval the following language:

> "Neither the letter nor the spirit of the act calls for a construction imputing to Congress the exaction of a condition so unreasonable. * * * All laws are to be so construed as to avoid an unjust or an absurd conclusion; and general terms are to be so limited in their application as not to lead to injustice, oppression or an absurd consequence."

Other important cases upholding the same principles are the following:

United States v. *Kirby*, 74 U. S. 482.
Price v. *Forrest*, 173 U. S. 410.
Chesapeake Company v. *Manning*, 186 U. S. 238.
United States v. *Laws*, 163 U. S. 258.
Oates v. *National Bank*, 100 U. S. 239, 244.
United States v. *Goldenberg*, 168 U. S. 95, 102.
McKee v. *United States*, 164 U. S. 287, 293.
Hawaii v. *Mankichi*, 190 U. S. 197.

It may be urged that the phrase should be limited, in its application, to cases where the addition of the poisonous ingredient causes degradation from standard. Such a construction is inadmissible.

No standards are defined in the statute, nor is any official authorized to fix standards. The only possible standards on which the degradation-from-standard construction could be based are those which are accepted by the "man in the street," and according to this construction the law would be obliged to measure down or up to his crude, unscientific and shifting notions. So construed the statute would serve no useful purpose.

Such a construction is not required or justified by the purpose of the statute, which is to prevent fraud and protect the public health. If it is construed to depend upon existing standards, this section would have no efficacy for preventing fraud and little efficacy for protecting the public health because the popular standards are not health standards in any accurate or useful sense. In the case of benzoate of soda, for instance, the average man either disregards its presence or he considers that its addition puts the food into the class of bad foods, but certainly he does not know whether or not benzoate of soda makes the food unwholesome, and to condemn food according to his notion is not to protect the public health. Such a construction would indeed thwart the health purpose of the statute; for the rule must work both ways, and if we can only condemn food which has fallen below the common standards, we cannot (except to the limited extent permissible under the common law) condemn anything which is approved by the common judgment, even though it should be scientifically demonstrated to be highly dangerous to health.

Such a construction would tempt the public authorities to discriminate between the varying popular standards and to insist upon the higher standards and to condemn arbitrarily the vast quantity of lower grade, but nevertheless wholesome, foods, and thus to increase the cost of living and the bur-

dens of the poor. They would argue that as no standards have been fixed, it must be intended that the officials should constitute themselves a sumptuary hierarchy and decide what we should be allowed to eat. Doubtless the courts would restrain such usurpation, but the courts travel slowly and the danger is great.

Under such construction everything would be decided according to the popular standards existing when the law was passed June 30, 1906, and these standards would soon prove to be an intolerable Procrustean bed. Or if Congress intended that the Court should in each case apply the standards existing when the case should be tried, the meaning of this great remedial statute must continually change as public opinion veers.

Lastly, such a construction would make this section of the law impossible of uniform enforcement, because there are no general or uniform standards of foods which could be the basis of this "degradation from standard" construction. The popular food standards are a matter of taste and tradition and there can be no general agreement on such matters. Different sections of the country and different classes of society have varying standards, and, indeed, the standards of one year do not agree with those of the next, for the taste of the people varies in foods as in fashions. No average of the varying standards can be constructed, for there are no sufficient data, and any such average, if it could be made, would be as vague as a composite photograph.

There is undoubtedly a rough popular distinction between "good food" and "bad food," and this distinction runs to unwholesomeness, for what a man considers to be bad food is bad for him and his digestion and his health in a very real sense. But this distinction is of little use or interest for

the purposes of the Pure Food Law; for there can be no general agreement as to just what is good and just what is bad, and there is no popular definition of goodness or badness with respect to foods, and to make the law effective the courts must have a definition and a rule. Indeed this provision of the law would be useless and unnecessary if it merely condemned what the "man in the street" considers bad, for food known to be bad he will reject quite irrespective of courts or congress, and any food in which any material degradation or inferiority is purposely concealed is adequately dealt with under other provisions of the statute which are framed for the prevention of fraud. Unless subdivision fifth protects the people against bad food which (although properly labeled) they do not recognize as bad, it has no use or purpose. There is a vast debatable ground between food which is universally considered as good and that which is universally recognized as bad, and it is within this debatable ground that the people need protection and yet within this debatable ground there are no definite or useful standards which are generally accepted. If the "degradation from standard" construction should be adopted, the Department of Agriculture and the courts would usually be found wandering within this debatable ground without a guide; in dealing with entirely fresh or entirely rotten foods (where the public needs no help or protection) they would have no difficulty, but in all intermediate cases their difficulties would be insuperable.

LASTLY.

We submit that the words in question must be construed to mean: "If it contain any added poisonous or other deleterious ingredient which *in the quantities used* may render such article injurious to health."

Respectfully submitted,

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of Counsel.

